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ARMY TRAINING STUDY: BATTALION TRAINING SURVEY VOLUMES

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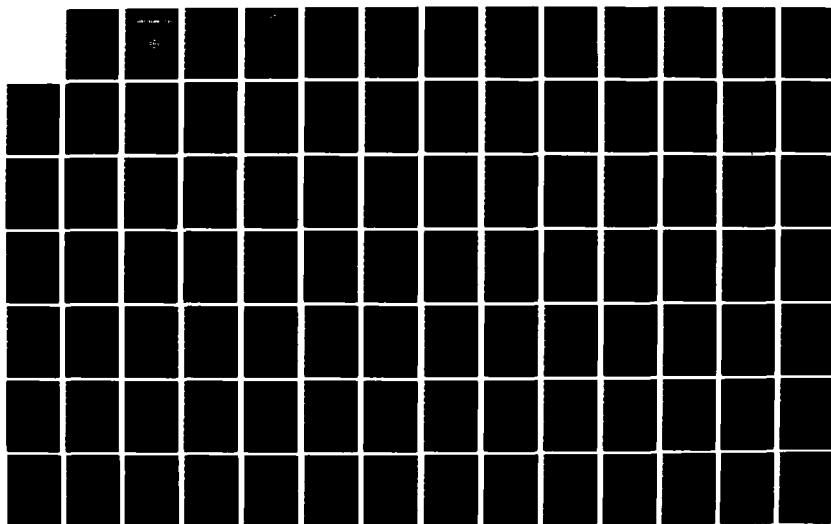
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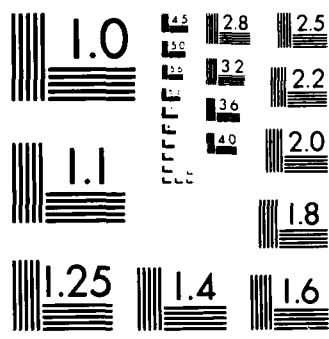
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BATTALION TRAINING SURVEY Volumes I and II

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<p>The Army Training Study (ARTS Study) Group conducted a comprehensive overview of Army training. The research probed across a wide range of training issues as the study group sought a broad perspective of army training. The study group conducted field surveys at numerous continental US Army posts and schools. The data obtained was analyzed using the Training Effectiveness Analysis (TEA).</p> <p>The Battalion Training Model Summary volume describe and explain the Battalion Training Model (BTM) and its uses. The BTM is a computer modeled analysis tool developed by the study group. It analyzes training resources available and predicts training levels attainable with those resources.</p>					
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This report was prepared by Actuarial Research Corporation and submitted to the Army Training Study (ARTS) under provisions of contract DAAG 39-77-0179. The two volumes contain the results of a survey administered by members of the ARTS team to officers and non-commissioned officers of selected units and institutions. All results are subject to revision by further analysis, comparison with other data, and further testing. The views, opinions, and/or findings contained herein are not to be construed as an official Department of the Army or the US Army Training and Doctrine Command (TRADOC) position, policy, or decision unless so designated by other official documentation.

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FINAL REPORT

BATTALION TRAINING MODEL SURVEY

VOLUME I

Prepared for the

U.S. Army Training Study
U.S. Army Training and Doctrine Command
Ft. Belvoir, Virginia

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July 1978

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VOLUME I

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I. INTRODUCTION

A. Purpose and Objectives

This report details the results of a study that was conducted for the Army Training Study (ARTS) during the period of 22 April through 21 July 1978. The purpose of the study was to provide data relative to individual and collective training for use as input to the Battalion Training Model being developed by the ARTS group.

The objectives of this effort were to:

1. Measure the relative criticality of a Mechanized Infantry/Tank Task Force being able to perform a series of collective tasks during the execution of missions listed in ARTEP^{1/} 71-2,
2. Measure the relative importance of the ARTEP 71-2 missions,
3. Estimate the times and frequencies required to train ARTEP missions, gunnery programs, collective and Soldier's Manual tasks, and
4. Determine the relative impact on training times and frequencies of various training detractors.

This study recognized early that in lieu of any existing empirical data the information required to satisfy the objectives was dependent upon quantitative, judgmental assessments by experienced military personnel. For this reason a unique questionnaire or polling format was used as the data collection medium. Detailed descriptions of the polling format and the methodologies employed are presented in the appendices.

^{1/} ARTEP = Army Training and Evaluation Program

B. Features

Two significant concepts are introduced in this study: the collective task, and relative criticality.

A collective task is a fundamental unit capability considered necessary to the execution of diverse missions. This approach to the organization of training systematically is designed to reduce and minimize unnecessary, wasteful duplication in the training effort yet insure that the essential subject matter is covered.

Relative "criticality" and "importance" refers to a quantitatively weighted prioritization of training subject matter. This feature permits the training manager to focus on essentials and provides him with guidance that allows him the flexibility of adjusting programs in accordance with changes in available resources.

Relative criticality and the impact of training detractors (e.g., unit "turbulence") was made possible by employing a unique methodology (and a variation thereto), Magnitude-Estimation Scaling (MAGES). MAGES in this application is used to synthesize mathematically, the value judgments of experienced military personnel with respect to qualitative and/or subjective issues. A more detailed description of MAGES may be found in Annex 2 to Appendix A.

C. Scope and Content

The report is presented in two volumes. Volume I contains four major sections:

- Section I - Introduction
- Section II - Background
- Section III - Respondent Profiles
- Section IV - Polling Results

Descriptions of the methodology and procedures, as well as supporting evidence and analyses are contained in appropriate appendices.

Volume II presents in tabular form seven statistical case studies reflecting the impact of various training detractors on the time and frequency required for individual and collective instruction.

II. BACKGROUND

The Army Training Study (ARTS) was constituted in 1977 to establish a system for relating training requirements to resources and readiness. To accomplish this assignment the design of a Battalion Training Model (BTM) was instituted. The purpose of the BTM is to provide:

1. A rationale for more effectively integrating collective and individual training in units,
2. A justification of the requirements for training resources,
3. A flexible tool for allocating those resources, and
4. A means to assist training managers.

The BTM requires as input, considerable data of varying description. Of particular importance are data relating to the times and frequencies for training individual ARTEP missions, collective and soldier's manual tasks. The impact of training detractors on these times and frequencies also is of significance.

As noted in the Introduction, it was recognized that reliable and consistent empirical data to satisfy BTM requirements currently does not exist. Also it was acknowledged that if such information could be gathered by observation, test, or other controlled means, the cost and time required for collection would be prohibitive.

The ARTS group concluded, therefore, that the nature of the required data was such that reasonable estimates could be made by military personnel with a background in the subject matter, i.e., the Mechanized

Infantry/Tank Task Force. It was recognized that the expected results, while somewhat imperfect, would be suitable for the developmental phase of the BTM.

The Actuarial Research Corporation (ARC) was selected in April 1978 to conduct a survey of selected U.S. Army units and schools. The effort was to include preparation of a multi-faceted questionnaire or polling format, data reduction, and post-polling analysis. ARTS group personnel would provide consultation during the preparation phase and would be responsible for administering the polling format. The effort commenced on 22 April 1978.

III. RESPONDENT PROFILES

A. Data Sources

The BTM polling formats (see Appendix A) were administered by members of the ARTS group to five separate groups of respondents as follows:

- 3rd Armored Division - Europe
- 4th Mechanized Infantry Division - Ft. Carson, Col.
- Army War College - Carlisle, Pa.
- Command and General Staff College - Ft. Leavenworth, Ks.
- Sergeant Majors Academy - Ft. Bliss, Tx.

A total of 269 responses were obtained from all sources.

Tables I and II summarize the distributions by position, branch, and rank of all respondents by unit and school respectively. As will be explained in the next section, this number was reduced to 176 to satisfy experience criteria.

B. Experience

To enhance the validity of the responses, the ARTS group established a minimum experience criteria for all respondents. After a qualitative examination of the issues, it was concluded that an experience level of at least 3 years with armor and/or mechanized infantry units was essential to enable the respondent to answer the questions with conviction. Some 93 of the original 269 respondents failed to qualify.

TABLE I

DISTRIBUTION OF ALL UNIT RESPONDENTS

Numbers of Respondents																			
	Total	ASSIGNMENT										BRANCH			RANK				
		Bn CO	Bn XO	Bn S-3	S-3 Staff	Co CO	CS Co CO	Other	Arm	Inf	Other	0-6	0-5	0-4	0-3	0-2/1	NCO	Other	
Units																			
3d Armor Div	54	7	-	8	3	23	7	6	31	22	-	-	7	8	30	6	2	1	
4th Mech-Inf Div.	48	8	1	8	-	22	7	2	28	17	3	-	8	2	32	5	1	-	
Total	102	15	1	16	3	45	14	8	59	39	3	-	15	10	62	11	3	1	

Note: All categories may not total equally in view of missing respondent input.

TABLE II
DISTRIBUTIONS OF ALL SCHOOL RESPONDENTS

SCHOOLS	TOT	ASSIGNMENT		BRANCH		RANK				
		Staff & Fac	Stud.	ARM	INF	0-6	0-5	0-4	E-9	E-8
AWC	43	6	37	16	27	8	35	-	-	-
C & GSC	85	-	85	30	55	-	3	82	-	-
Sgt Majors Acad.	39	-	39	12	27	-	-	-	4	35
Total	167	6	161	58	109	8	38	82	4	35

The remainder, henceforth, will be designated the "Qualified Pool" for purposes of this report.

Table III summarizes the experience of the "Qualified Pool." The reader is cautioned that the n, i.e., the number of respondents included in the specific calculation, may not always agree with the total of 176. The discrepancies can be attributed to some respondents' failure to provide complete information on the biographical section of the polling format.

The fact that mechanized infantry when compared to armor is a less consistent branch material assignment is clearly evident from the lower average experience levels. Whereas Armor personnel are usually assigned to Armor or cavalry units, Infantry personnel may be assigned to such units as Light Infantry, Airborne/Air Assault Infantry in addition to Mechanized units.

Figure 1 depicts the distribution of the months in present assignment for three key battalion positions. While the experience levels based on position may appear to be low, it must be assumed that each respondent has served at a lower echelon in the Armor/Mech-Infantry environment. For example, the battalion commander probably served on the battalion staff or as a company commander, the S-3 as a company commander, and the company commander as a platoon leader.

TABLE III

EXPERIENCE SUMMARIES
of the
QUALIFIED POOL OF RESPONDENTS

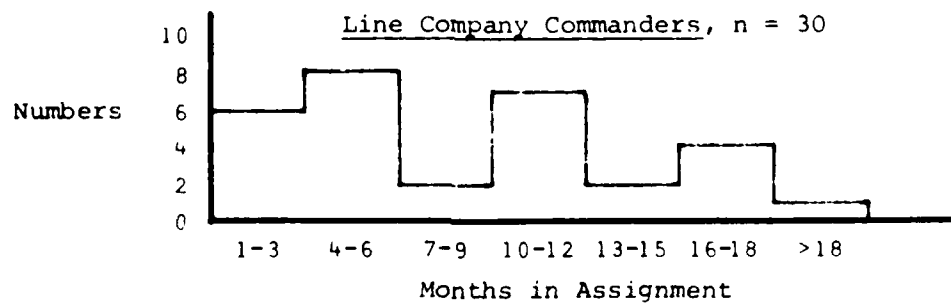
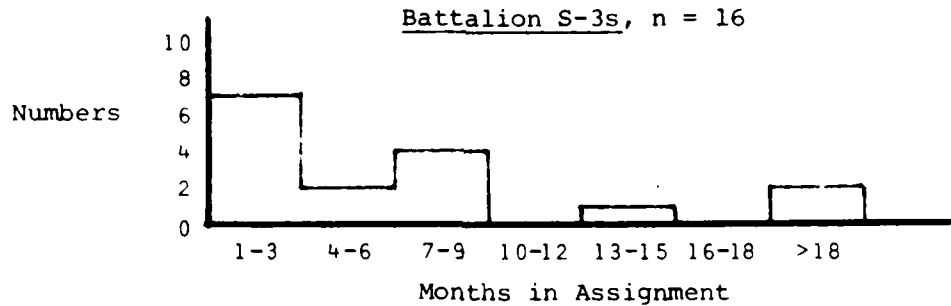
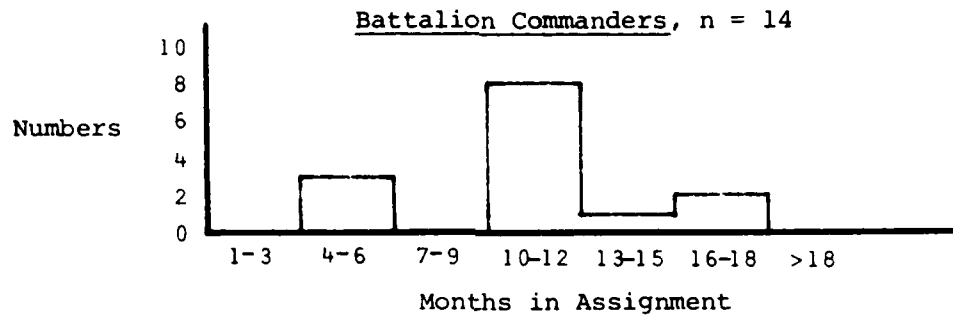
	Years Total Service	N	Years Armored Exper.	N	Years Mech. Inf. Exper.	N	N Having Both Arm & Mech Inf Experience	N in Arm Br	N in Inf Br
Total Qualified Pool	13.3	174	8.1	102	5.2	90	16	91	83
3d Armored Div.	10.5	49	7.8	29	5.0	23	2	27	22
4th Mech. Inf. Div.	9.2	34	5.6	22	4.9	15	3	20	14
Army War College	18.1	27	9.5	15	4.8	14	1	12	15
C & GS College	13.4	41	5.6	25	3.5	24	8	21	20
Sgts. Majors Academy	19.3	23	17.8	11	9.2	14	2	11	12

All years are the result of arithmetic means.

Figure 1

MONTHS IN PRESENT ASSIGNMENT

Distributions by Position



IV. RESULTS

A. General

The results of the 9 set BTM survey are reported as four separate training issues as follows:

1. Ratings - The rating or weighting by magnitude-estimation of the Collective Tasks and the ARTEP Missions; Sets II and V of the Survey.

2. Unit Personnel Conditions - The measurement of the expected impact resulting from training detractors; Set III. This part also examines the interrelationship of training among the various echelons in a battalion, training emphasis by echelon, and maintenance.

3. Training Times and Frequency - Estimates of the hours and the number of periods required to train Collective Tasks, ARTEP Missions, Soldier's Manual Tasks, and Gunnery; Sets IV, VI, VII, and IX respectively.

4. Additional Conditions - Miscellaneous issues associated with training; Set VIII.

This section includes an interpretation of the results as well as instructions for utilizing the data.

B. Ratings

1. Collective Tasks

The collective tasks, as briefly defined in the Introduction, are unit capabilities or functions that can be employed

either individually or (more probably) in groups to execute successfully an assigned mission. The collective tasks taken as an entity may be likened to a unit's complete "set of tools" or "bag of tricks" that are used as needed to get the job done. In essence, the collective task is the next stage of evolvement from the individual soldier's skills that are set forth in the Soldier's Manual series to group or team skills.

Using the Magnitude-Estimation Scaling technique (see Annex 2 to Appendix A for a description) the respondents were asked to judge "the relative criticality of 21 collective tasks in terms of how critical each one is to (the) Mechanized Infantry/Tank Task Force's ability to execute all the ARTEP missions in order to become fully combat ready." For purposes of this survey, "fully combat ready" was defined as attaining and maintaining a proficiency level of 95%, i.e., the ability to successfully perform 95% of individual and collective tasks to established conditions and standards.

The relative weights assigned by the qualified pool of respondents (176) is shown on Table IV in descending order of criticality. Figure 2 displays the relative weights graphically. The lines connecting the points are used solely to aid in the interpretation of the relative displacement. The resulting curve has no mathematical significance.

The highest rated collective task, "Employ fire and maneuver/movement" with a relative weight of 4.1, was judged by the qualified

TABLE IV
RELATIVE CRITICALITY OF COLLECTIVE TASKS

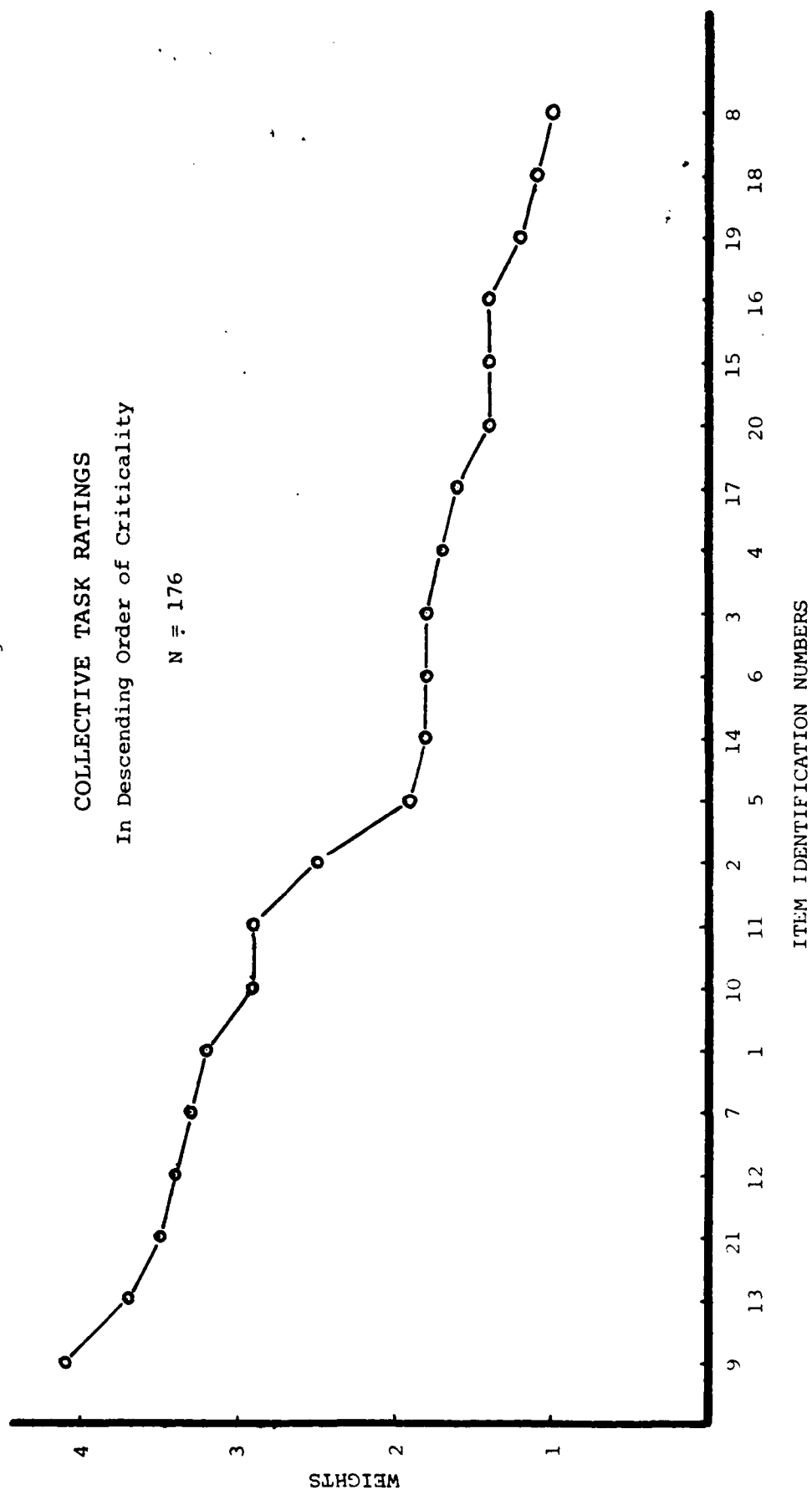
<u>Rank Order</u>	<u>I.D. * No.</u>	<u>Collective Task</u>	<u>Relative Weight</u>
1	9	Employ fire and maneuver/movement	4.1
2	13	Employ fighting vehicles	3.7
3	21	Maintenance of weapons, equipment, and vehicles	3.5
4.	12	Perform Leader/Commander Tasks	3.4
5	7	Employ organic antitank weapons	3.3
6	1	Perform tactical movements	3.2
7	10	Organize and prepare battle positions, including mines and obstacles	2.9
8	11	Employ special techniques for operating at night and under limited visibility	2.9
9	2	Employ cover and concealment	2.5
10	5	Employ communications and electronic equipment, including operations in an EW environment	1.9
11	14	Employ combat service support (all Admin/Log activities)	1.8
12	6	Perform reconnaissance	1.8
13	3	Employ special techniques for NBC operations	1.8
14	4	Employ organic mortars	1.7
15	17	Employ special techniques for operating in a hostile TAC air environment	1.6
16	20	Coordinate and employ non-organic combat support assets	1.4
17	15	Perform security and intelligence operations	1.4
18	16	Reorganize; consolidate	1.4
19	19	Employ organic small arms	1.2
20	18	Breach minefields and obstacles	1.1
21	8	Employ special techniques for combat in built-up areas	1.0

* The I.D. No. refers to the number signifying the order of presentation in Set II of the polling formal. (See Annex 1 of Appendix A .)
This number is retained for identification purposes in all tables and figures.

Figure 2

COLLECTIVE TASK RATINGS
In Descending Order of Criticality

N = 176



pool as being the most critical. The weight can be interpreted as being 4.1 times more critical than the lowest rated item, i.e., No. 8 - special techniques for combat in built-up areas. Conversely, Item 8 is approximately 24% as critical as Item 9.

Because MAG ES establishes ratios among each of the items, the same logic applies between any two items; e.g., Item 17 (Wt. 1.6) is 50% as critical as Item 10 (Wt. 3.2), or Item 11 is 2 times more critical than Item 15.

Several items have identical weights. This means that the qualified pool has placed equal criticality ratings on those items. Rank ordering, therefore, becomes somewhat meaningless.

The implications of the ratings are left to qualified military training and operations personnel. It should be noted, however, that the range of weights between 4.1 and 1 is relatively small, implying in essence that no one item is extreme in its criticality. This could be interpreted rationally as meaning that all collective tasks are of almost equal value within the scope of the 21 items presented.

It should be noted that other related tasks may be defined at some future time which might be considered to be more or less important than those shown in Table IV. At such time a new survey would be necessary to adjust the scale.

2. ARTEP Missions

The assigned missions for all battalion echelons, i.e., battalion through squad level, as specified in ARTEP 71-2 were combined into 14 representative items which for practical purposes are all-encompassing. The respondents were asked to "judge the relative importance to train for each type of mission" (to successfully counteract a sophisticated and well-trained threat).

Table V lists the 14 weighted ARTEP missions in descending rank order. The relative weight and order are depicted graphically in Figure 3. The weights, also derived by MAGES, are representative of the collective perceptions of the qualified pool.

The results may be interpreted in the same manner as the collective task ratings, above. For example, Item 6 with a weight of 2.4 is 2 times more important to train than Items 12 and 4 (wt. 1.2), or conversely, the latter are half as important as Item 6.

Although Defense, Item 10 (wt. 3.5), is rated somewhat more important than Night Attack, Item 7 (wt. 2.6), there appear to be no extreme issues. As with the collective tasks, the range of weights is somewhat narrow signifying relative equality of importance.

The fact that Defense was rated highest causes some concern relative to the current training doctrine. This factor may reflect an overemphasis on defensive tactics to the detriment of offense.

Since MAGES weights are additive, the weights of the offensive oriented ARTEP missions were added together and divided by the total

TABLE V
RELATIVE IMPORTANCE OF ARTEP MISSIONS

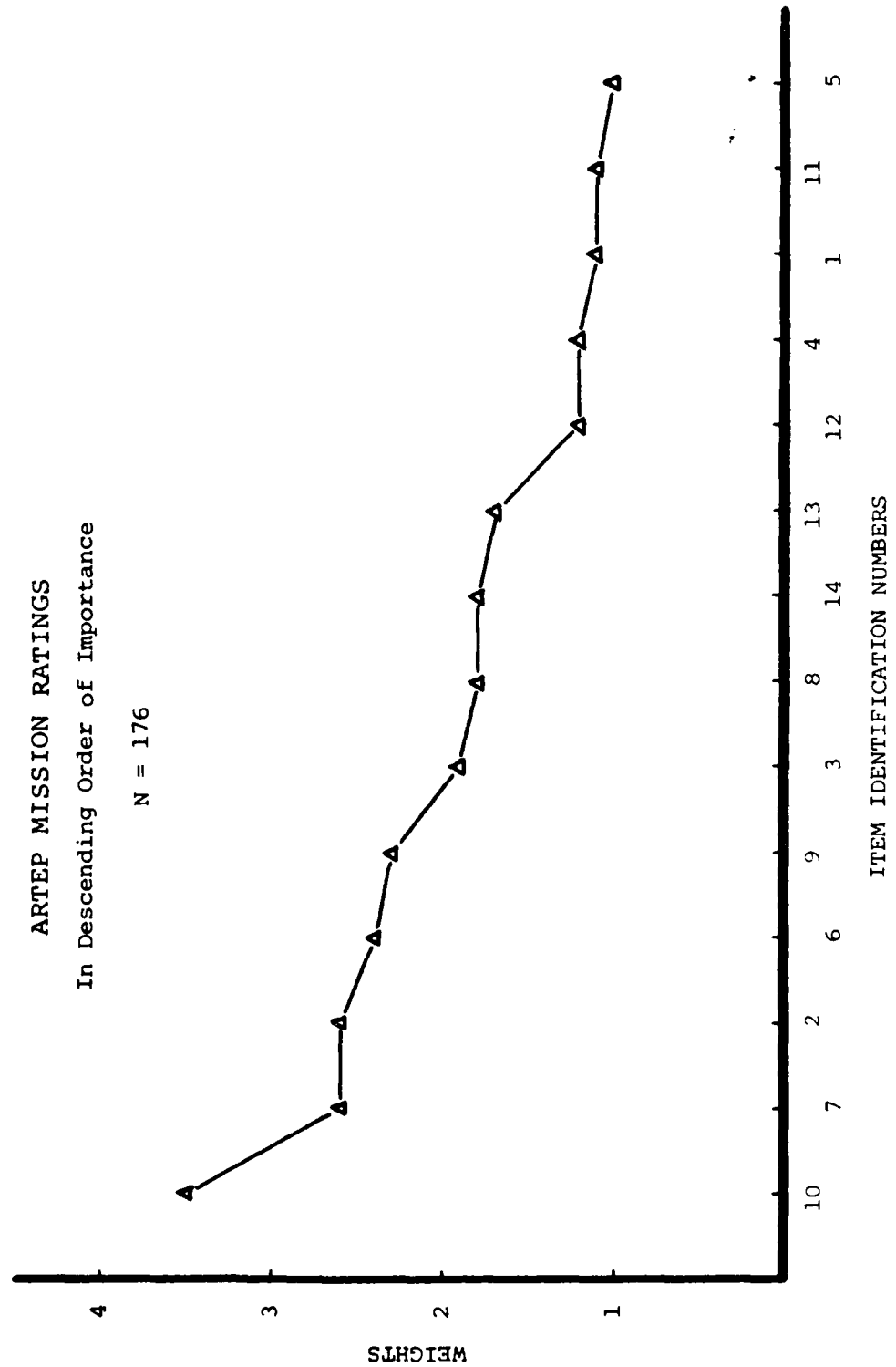
<u>Rank Order</u>	<u>I.D. No.</u> *	<u>ARTEP Mission</u>	<u>Relative Weight</u>
1	10	Defense	3.5
2	7	Night attack	2.6
3	2	Delay	2.6
4	6	Deliberate attack	2.4
5	9	Hasty attack	2.3
6	3	Disengage (under pressure)	1.9
7	8	Prepare a strong point	1.8
8	14	Movement to contact	1.8
9	13	Antiarmor ambush	1.7
10	12	Defense of a built-up area	1.2
11	4	Passage of lines	1.2
12	1	Exploitation	1.1
13	11	Crossing water obstacles, i.e., river crossing	1.1
14	5	Patrolling (reconnaissance and combat)	1.0

* The I.D. No. refers to the number signifying the order of presentation of Set V of the polling format (See Annex 1 to Appendix A).

Figure 3

ARTEP MISSION RATINGS
In Descending Order of Importance

N = 176



sum of weights to arrive at a percentage. Table VI summarizes the percentages of offensive missions by respondent subgroup as well as by the total.

The ARTEP missions associated with offense are:

- Night attack
- Deliberate attack
- Hasty attack
- Movement to contact
- Exploitation
- River Crossing
- Patrolling (reconnaissance and combat)*

Of the subgroups only the 4th Division and the Sergeant Majors' Academy (SMA) show a positive inclination toward offense, i.e., a percentage greater than 50%. The reason may be that the current doctrine of delay and containment in Europe has permeated the training establishment to the detriment of offense.

With respect to the 23 SMA respondents, it should be noted that their average years of service was 19.3 compared with 12.4 years for the remaining 151 in the qualified pool.

3. Utilization

The weightings for collective tasks and ARTEP missions can provide to the training community considerable guidance with respect to course planning and resources allocation.

* While patrolling typically may not be considered an offensive activity, in this case combat patrolling was viewed as an offensive orientation and was therefore included in the list.

TABLE VI
 PERCENTAGE OF ARTEP MISSION
 IMPORTANCE WEIGHTS
 ASSOCIATED WITH
 OFFENSE

Respondent Group	n	Percentage Offense
4th Mech Inf Div	34	52.3
3d Ar Div	49	46.0
AWC	28	46.7
C&GSC	42	40.3
All Above	153	45.2
SMA	23	58.6
Bn COs	42	47.1
Total Qualified Pool	176	46.9

It is now possible to focus the unit's training program specifically on the more combat critical or important items.^{1/} The final decision of course must be tempered by the unit's actual degree of subject mastery; i.e., although "fire and maneuver/movement" is the most important collective task, the commander of a unit highly skilled in the subject may elect to train on a less critical item.

The reader is cautioned that it is essential to bear in mind that relative criticality and importance in no way implies a correlation with the cost and time requirements of training. In fact a very low weighted item may require many times more resources than the higher rated tasks or missions.

In the event that budget and/or time limitations force reductions, the weights can provide a useful rationale for decrementing the training program with the minimum possible impact on combat readiness. In other words, the training frequency and time for the less critical tasks (etc.) can be reduced before the higher priority items.^{2/} As pointed out in the previous paragraph, cost data also must be considered.

C. Unit Personnel Conditions

This portion of the survey examined a number of issues. Part IIIA, Sets I & II, and Part IIIB gathered respondent perceptions in quantitative form relative to the impact of three major training

^{1/} Care must be exercised to ensure that training in the less critical subject matter is not neglected.

^{2/} Reduction must be accompanied by proper analysis in the context of total resource requirements. The BTM provides this analytic capability.

detractors on the time and frequency of instruction. Part IIIC measures the benefits, if any, accruing to any given echelon while training with higher level units. Part IIID attempts to determine at which echelon within the battalion training should be emphasized. In addition, two questions related to maintenance are asked.

1. Impact of Training Detractors

Three significant training detractors were examined:

a. Personnel not present for training, i.e., the inability of personnel for any variety of reasons, e.g., details, leave, sick-call, to attend required training periods. The effect on the unit is the necessity for conducting additional sessions. This is a "frequency" related effect.

b. Change in duty position, i.e., the condition that occurs when personnel are shifted internally within the unit for one assignment to another. The move implies additional training to become proficient in the new position. This also is a "frequency" related effect.

c. Trainer grade substitution, i.e., the necessity for substituting a one grade lower officer or non-commissioned officer trainer by virtue of a shortage of qualified personnel. This primarily is a "time" effect; i.e., more time is required for any given session to compensate for the new, lower ranked trainer's assumed lack of total qualification and proficiency in the senior position. Trainer grade substitution may be considered to be the complement of the other

detractor, often referred to as "Officer-NCO fill"; i.e., 15% trainer grade substitution is equivalent to 85% Officer-NCO fill.

A fourth training detractor, turnover per quarter (not examined in this survey), refers to the movement of personnel in and out of the battalion. The rate of turnover as well as the measured impact on training frequencies is assumed to be equal to one-half ($1/2$) that for change in duty position. Insofar as the rate is concerned, it was the consensus of the ARTS group that general experience would support this assumption.

The purpose for measuring the impact of the various training detractors was to develop adjustment factors whereby the times and frequencies required for instruction could be adjusted in accordance with changes in unit personnel conditions. A general assumption guided the derivation of the factors; i.e., the respective adjustment factors for any given set of conditions would apply to all respective time and frequency issues (collective tasks, ARTEP missions, and Soldier's Manual tasks).

While some differences in the magnitude of the adjustment factors among the various issues may exist, time limitations imposed on the survey precluded a sensitivity analysis. Since the design of the BTM is in its first-order stage of prototype development, it was concluded that little loss of accuracy would be incurred from using the factors for all training times and frequencies.

The approach used to derive the data relevant to each detractor is a modified form of Magnitude-Estimation Scaling, i.e., a frequency of 10 repetitions is used as the magnitude-estimation base in lieu of an abstract relative weight. A description of the procedures and methodologies used is found in Appendix A.

The graphs shown in Figures 4, 5, and 6 show the impact respectively of the three training detractors examined. The numbers of periods and hours used in the survey have been converted into generalized adjustment factors for the collective task, ARTEP mission, and Soldier's Manual task time and frequency applications. Equations fitting the curves between the prescribed personnel condition limits are listed on Tables VII, VIII, and IX.

The curves and equations have been normalized, i.e., adjusted, to reflect a basic, representative set of personnel conditions. The base set, selected by the ARTS group, is as follows:

- a. 25% Not present for training
- b. 35% Change in duty position
- c. 15% Trainer grade substitution

These conditions are a composite of those used in the U.S. and Europe surveys and vary somewhat from the conditions shown in the survey (see Annex 1 of Appendix A).

Curves representing the 70%, 85%, and 95% proficiency levels were derived from empirical data; the 75%, 80%, and 90% levels

Figure 4

TRAINING DETRACTOR ADJUSTMENT CURVES

Not Present for Training
(for Frequency Adjustment Only)

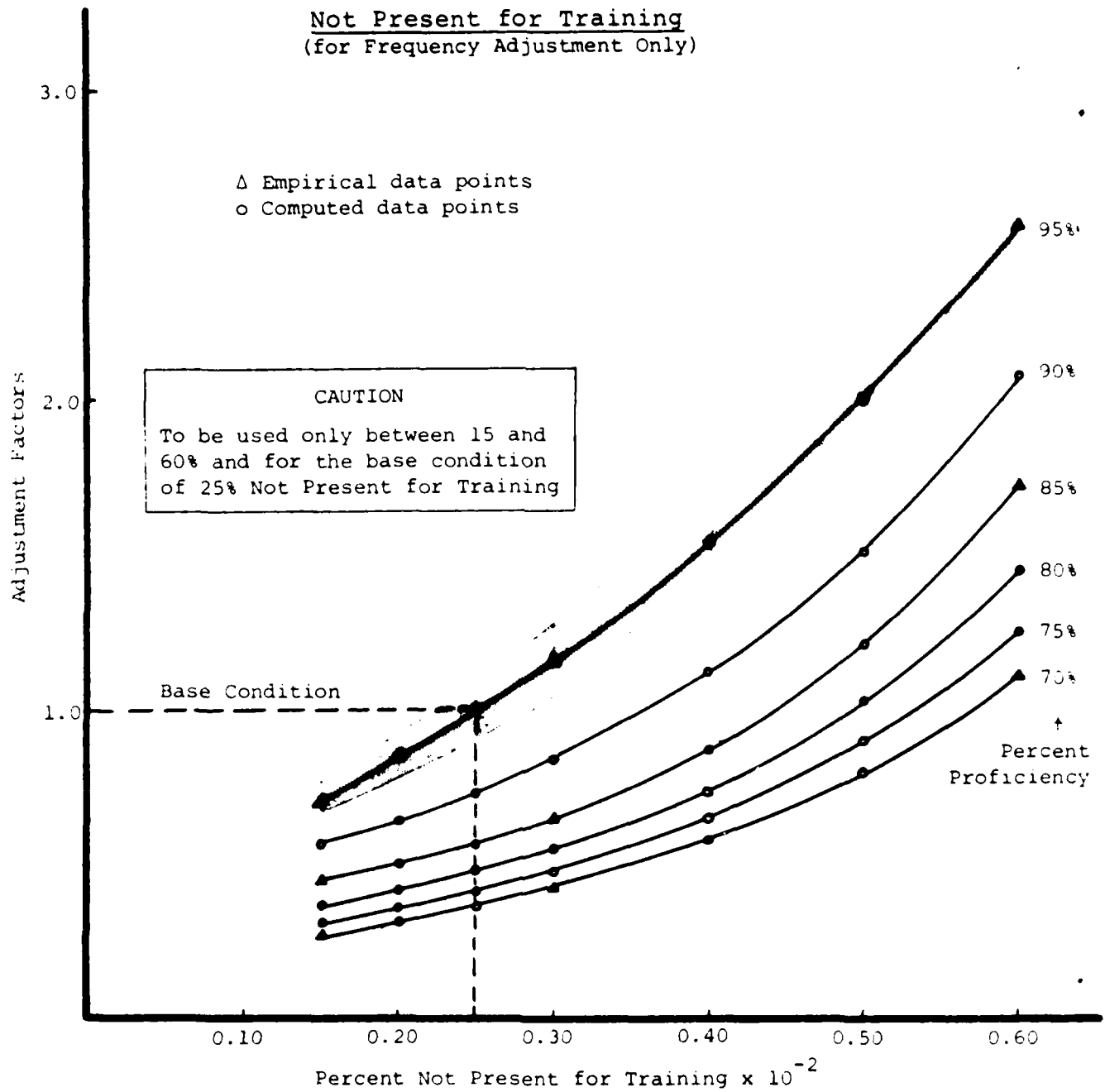


Figure 5

TRAINING DETRACTOR ADJUSTMENT CURVES

Change in Duty Position
(for Frequency Adjustment only)

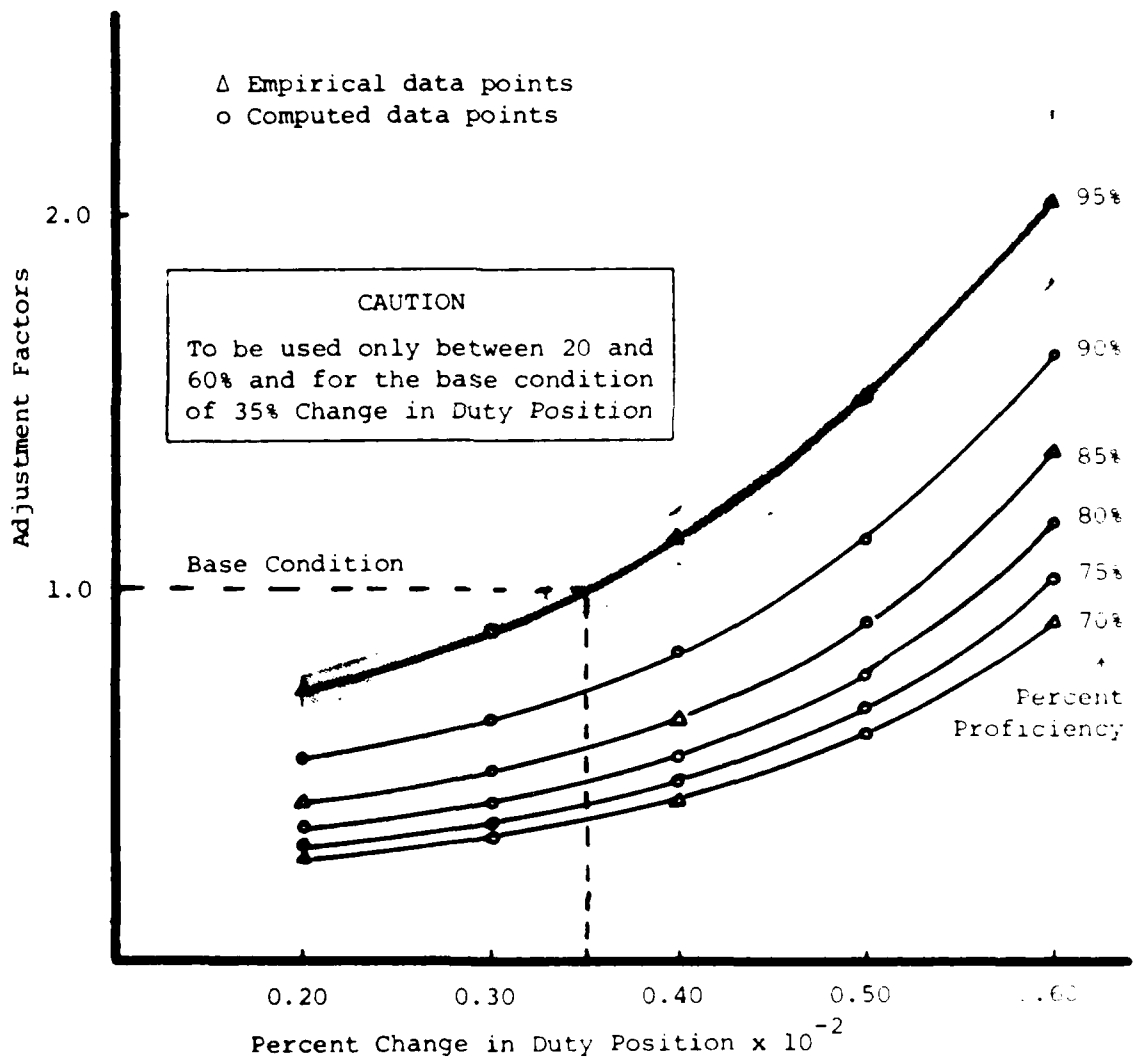


Figure 6

TRAINING DETRACTOR ADJUSTMENT CURVES

Trainer Grade Substitution
(for Time Adjustment Only)

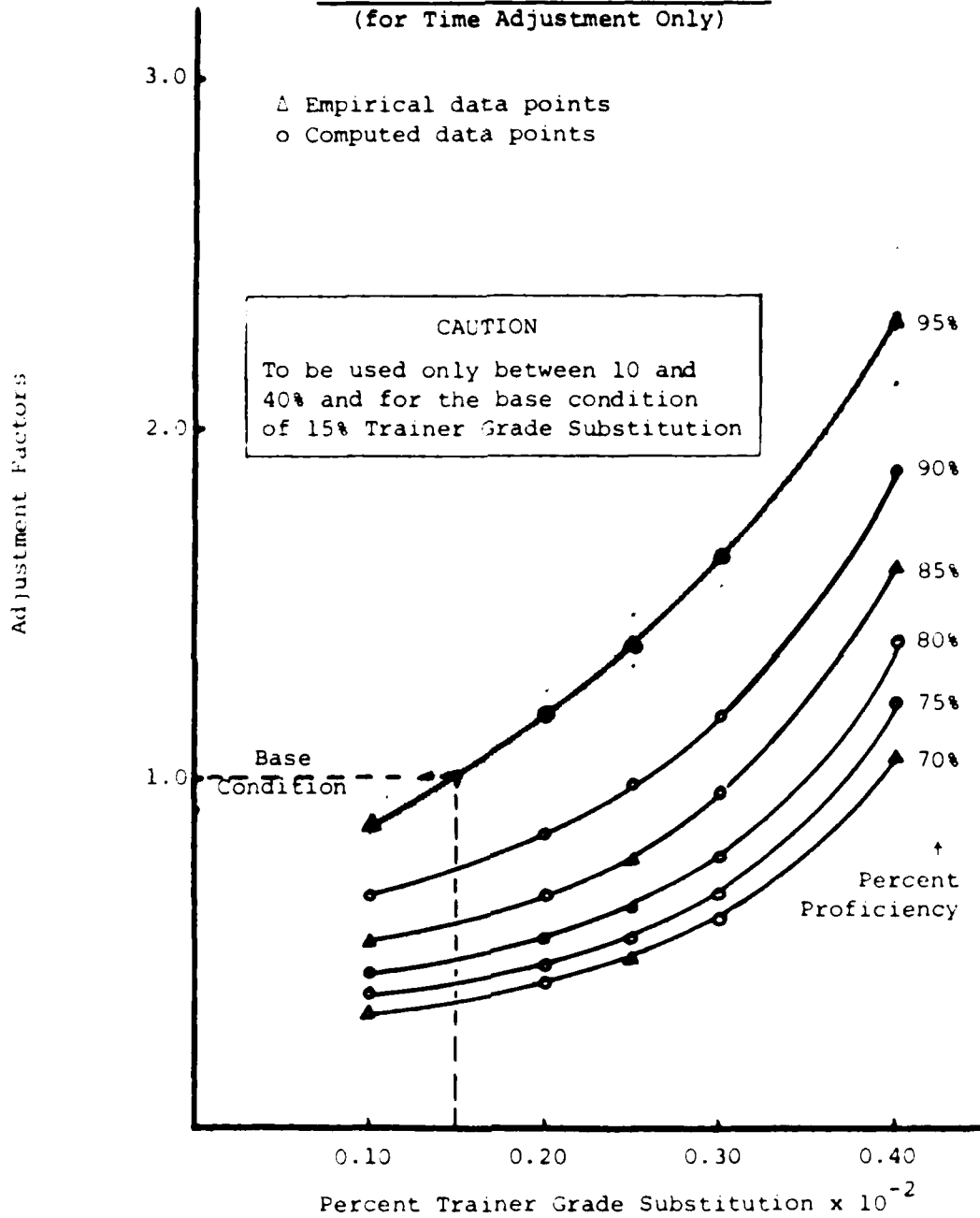


TABLE VII
UNIT PERSONNEL CONDITIONS
 FREQUENCY ADJUSTMENT EQUATIONS
 for
 NOT PRESENT FOR TRAINING

Proficiency Level	Equation
95%	$y = 0.98993e^{1.9481x} - 0.6159$
90	$y = 0.22661e^{3.5399x} + 0.1846$
85	$y = 0.12367e^{4.1602x} + 0.2192$
80	$y = 0.12699e^{3.8862x} + 0.1425$
75	$y = 0.14692e^{3.4832x} + 0.0622$
70	$y = 0.12940e^{3.4867x} + 0.0617$

CAUTION:

To be used only between 15 and
 60% and for the base condition
 of 25% Not Present for Training

TABLE VIII
UNIT PERSONNEL CONDITIONS
 FREQUENCY ADJUSTMENT EQUATIONS
 for
 CHANGE IN DUTY POSITION

Proficiency Level	Equation
95%	$y = 0.17150e^{3.8107x} + 0.3525$
90%	$y = 0.05978e^{5.0737x} + 0.3751$
85%	$y = 0.02958e^{5.9281x} + 0.3333$
80%	$y = 0.02474e^{5.9935x} + 0.2780$
75%	$y = 0.02351e^{5.8706x} + 0.2339$
70%	$y = 0.02811e^{5.3878x} + 0.1974$

CAUTION:

To be used only between 20 and 60% and for the base condition of 35% Change in Duty Position

TABLE IX
UNIT PERSONNEL CONDITIONS
 TRAINING TIME ADJUSTMENT EQUATIONS
 for
 TRAINER GRADE SUBSTITUTION

Proficiency Level	Equation
95%	$y = 0.49868e^{3.6766x} + 0.1397$
90%	$y = 0.08861e^{6.8938x} + 0.4834$
85%	$y = 0.04164e^{8.3518x} + 0.4340$
80%	$y = 0.02449e^{9.3291x} + 0.3777$
75%	$y = 0.01876e^{9.6461x} + 0.3308$
70%	$y = 0.02052e^{9.1299x} + 0.2789$

CAUTION:

To be used only between 10 and 40%
 and for the base condition of 15%
 Trainer Grade Substitution

by graphical interpolation. Statistical confidence intervals at the 95% level were calculated for the empirical curves only and are summarized on Table X. To preserve clarity the confidence interval for the 95% proficiency level only are plotted in the figures.

Each of the figures display an interesting similarity and consistency. Note that a greater vertical displacement among the curves as the proficiency level increases. This phenomenon is interpreted as implying that greater incremental effort is required to reach the higher levels of proficiency.

In order to apply the data, one merely enters the graph at a new personnel condition, selects the desired proficiency level, and reads the appropriate adjustment factor. The times and frequencies for the collective tasks, ARTEP missions, and Soldier's Manual Tasks contained in this report are then multiplied by the factor.

These adjustments are limited to the times and frequencies reported in this report only, since the curves, equations, and the basic data are standardized on the base conditions cited above. This restriction is dictated by the fact that the time and frequencies estimated by the respondents were based on those conditions.

Additional research is recommended with respect to measuring and integrating the changes induced simultaneously by changes in more than one detractor.

TABLE X
SUMMARY OF 95% CONFIDENCE INTERVALS

UNIT PERSONNEL CONDITIONS						
Proficiency Levels	Not Present for Training					
	15%		30%		60%	
	Factor	Confidence Intervals	Factor	Confidence Intervals	Factor	Confidence Intervals
95%	0.71	0.66-0.77	1.16	1.03-1.32	2.57	2.15-3.07
85%	0.45	0.43-0.47	0.65	N/A	1.72	1.48-1.99
70%	0.28	0.26-0.31	0.43	0.39-0.46	1.11	0.96-1.27
Change in Duty Position						
	20%		40%		60%	
	Factor	Confidence Intervals	Factor	Confidence Intervals	Factor	Confidence Intervals
95%	0.72	0.68-0.76	1.14	1.06-1.21	2.04	1.82-2.28
85%	0.43	0.41-0.45	0.65	N/A	1.37	1.25-1.50
70%	0.28	0.26-0.30	0.44	0.42-0.46	0.91	0.82-1.01
Trainer Grade Substitution						
	10%		25%		40%	
	Factor	Confidence Intervals	Factor	Confidence Intervals	Factor	Confidence Intervals
95%	0.86	0.81-0.91	1.39	1.32-1.47	2.31	2.13-2.52
85%	0.53	0.51-0.56	0.77	N/A	1.61	1.50-1.73
70%	0.33	0.30-0.36	0.48	0.46-0.51	1.07	0.99-1.15

2. Unit Training Echelons

The purpose of this portion of the survey was to measure how much more or less beneficial it is for a unit to train at different levels within the battalion. Three subordinate elements of the battalion, the squad/tank crew, the platoon, and the company, were examined.

These relative benefits are sometimes referred to as "vertical overlap."

The results of this portion are expressed as factors and are summarized on Table XI.

These results show that generally, it is more beneficial for the unit to train at the next higher echelon. At two levels above, however, the respondents are saying collectively that the value of large integrated training two levels or more above a given level provides increasingly marginal benefits.

The major guidance offered by this data is that training should be concentrated at any given level and one level higher. Although training at two levels (and higher) is essential for integration of forces, the effort appears to be less beneficial at the higher echelons.

The data may be used to apportion any block of time according to the percentages shown in Table XII. For example, a squad given a block of 100 hours for instruction would train 31 hours

TABLE XI
RELATIVE TRAINING BENEFIT BY ECHELON
QUALIFIED POOL OF RESPONDENTS
n = 176

Unit	Training Benefit Factors by Echelon of Training				
	Individ.	Sqd, Tk Crew	Platoon	Company	Battalion
Individual	1.00	1.64	1.09	0.59	0.30
Squad/Tank Crew	N/A	1.00	1.19	0.70	0.31
Platoon	N/A	N/A	1.00	1.19	0.64
Company	N/A	N/A	N/A	1.00	1.15

TABLE XII
PERCENTAGE OF TIME TO TRAIN AT
HIGHER ECHELON

Unit	Percentage of Time to Train at Higher Echelon				
	Individ.	Sqd/Tk Crew	Platoon	Company	Battalion
Individual	22%	35%	24%	13%	6%
Squad/Tank Crew	N/A	31%	37%	22%	10%
Platoon	N/A	N/A	35%	42%	23%
Company	N/A	N/A	N/A	47%	53%

or 31% of the time as a squad, 37 hours or 37% of the time with its platoon, 22 hours (22%) with its platoon in company training, and 10 (10%) hours finally integrated as a battalion. The percentages are applicable to any block of training time.

3. Training Emphasis

The respondents were asked to indicate the relative importance of training at the various echelons within a battalion. The company was used as a base. The results are shown as relative weighting factors in Table XIII, the factors being normalized at the battalion level.

Positive evidence is offered by the qualified pool that training at relatively low levels is the most important. The rationale appears that the individual soldier would receive more personalized attention in the smaller collective training environment than when integrated with a large unit.

D. Training Times and Frequency

The respondents were asked to estimate the times and frequencies that would be required to train collective tasks, ARTEP missions, Soldier's Manual tasks, and gunnery programs, at various echelons in the battalion. Two separate questions relative to maintenance and maintenance training were included.

The purpose of this exercise was twofold, i.e.,

TABLE XIII

TRAINING EMPHASIS FACTORS

Qualified Pool, n = 176

Echelon	Factor
Individual	1.88
Crew (Tank)	2.55
Squad	2.54
Platoon	2.78
Company	1.72
Battalion	1.00

- To elicit from qualified military personnel, their perceptions as to requirements, and
- To fill voids in the data base.

For orientation the respondents were asked to assume a base set of unit personnel conditions as follows:

- 85% Officer/NCO fill
- 30% Not present for training
- 20% Turnover per quarter
- 40% Change in duty positions

It was later decided to amend the set for the European forces respondents to reflect more accurately the local environment, e.g.

- 10% Not present for training
- 10% Turnover per quarter
- 20% Change in duty positions

A considerable range in responses for most items created a requirement for special statistical treatment of the data. (A more detailed discussion of the procedures employed may be found in Appendix A.) In summary, however, a technique was evolved whereby extremely high responses were systematically eliminated. The remaining data base was termed "truncated." All time and frequency data was treated according to the same set of rules.

1. Collective Tasks, ARTEP Missions, Soldier's Manual Tasks

The time and frequency data are summarized on Tables I, II, and III in Volume II for ease of reference.

Seven case studies are included. Six of the studies reflect adjustments to times and frequencies according to selected changes to the base set of unit personnel conditions.

With respect to the Soldier's Manual Tasks, the results are organized by "Battle Drills," i.e., integrated training packages designed by the ARTS group. Although the questions are numbered according to the survey instrument sequence, the Battle Drill organization is functional. The reader may cross reference the numbers by referring to the key in Volume II of the report.

It should be noted that the base set adapted for computational purposes is slightly different than those listed above. The purpose for the adjustment was to combine the European and other data bases on a common footing. The adjusted set of base conditions is as follows:

- 85% Officer/NCO fill
- 25% Not present for duty
- 15% Turnover per quarter
- 35% Change in duty position

2. Maintenance

Two specific questions related to maintenance were asked of the respondents in Part IIID. The questions relate to the estimated amount of time required to perform unit maintenance on weapons, equipment, and vehicles per week and the amount of time the unit should spend on maintenance training per week. The results are shown

in Table XIV. Armored and Infantry responses are compared with the composite mean.

TABLE XIV
MAINTENANCE ACTIVITIES
N = 158

Activity	Mean Time (hours)	Armored Resp. (hours)	Infantry Resp. (hours)
Maintenance performance	13.2	14.9	11.3
Maintenance training	3.3	3.5	3.1

The increased times for Armor probably reflect the greater degree of mechanization.

3. Gunnery Programs

The respondents were asked to estimate the frequency per year that selected units should engage in live fire gunnery training. Three proficiency levels were specified, i.e., 95%, 85%, and 70%. Although not indicated in the questionnaire (Part IX), both "On" and "Off" cycle estimates were solicited by the survey administrator teams. The estimates are listed on Table XV. All data are rounded to the nearest whole number.

As might be expected the data shows that as proficiency requirements are reduced, the frequency decreases.

TABLE XV
GUNNERY PROGRAM FREQUENCIES
n = 176

Unit	Cycle	Level of Proficiency		
		Fully Combat Ready (95%)	Combat Ready (85%)	Marginally Combat Ready (70%)
Tank Co.	On	3	2	1
	Off	3	2	2
AT Pltn	On	3	2	2
	Off	5	3	3
81 mm Mortar Pltn	On	4	3	2
	Off	5	4	3
107 mm Mortar Pltn	On	4	3	2
	Off	5	4	3
Scout Pltn	On	3	2	1
	Off	3	2	2
Redeye Pltn	On	3	2	2
	Off	4	3	3

E. Additional Conditions

Part VIII of the survey instrument addresses a number of separate, but training-related issues of particular interest to the ARTS group in developing the BTM. The subjects covered include various aspects of training detractors, retraining, scheduling, resource allocation, etc.

In view of the varying subject matter, each issue will be treated separately. Responses of the Qualified Pool only were used in the computations and all answers are based on the truncated data base except where noted.

The results contained herein must be used with caution and intuition. Generality beyond the conditions stated cannot be implied.

1. Question 1

The respondent was asked to estimate "on a percentage basis, how much less effective (in terms of the ability to conduct integrated training) is the leader/trainer who is one grade below the grade authorized by TOE?"

Mean Response: 25.1%

2. Question 2

This question seeks to determine the percentage increase in the time required to regain proficiency if two months have elapsed since last performing the task. The desired interval in this generalized case is one month, one-half the actual elapsed time.

Mean Response: 27.0%

3. Question 3

This is a two-part question.

a. Part 3a: The first asks "how many personnel changes can occur before crew retraining is required?" Estimates were requested for five crew served units/weapons systems. The "practical mean" refers to the arithmetic mean that has been rounded to the nearest integer.

Mean Responses:

System	Practical Mean	Arithmetic Mean	Crew Members
Tank	1	0.71	3
Tow	1	0.83	3
Rifle Squad	3	2.99	9
Mortar	1	1.39	4
Rifle Pltn	9	8.72	39

Crew retraining was judged to be necessary when approximately a fourth to a third of the crew members (non-leader) are changed.

Caution must be exercised when considering this data since the specific training (MOS) and skill level of the individual as well as his replacement must be weighed.

b. This question probes the Qualified Pool's judgment as to whether "retraining must be conducted to maintain a fully combat-ready (95%) proficiency level if the crew leader changes. The following

chart displays the frequency of responses for three selected alternatives.

Mean Responses:

Unit/System	Alternatives		
	1	2	3
Tank	58.5%	35.2%	4.9%
Mortar	36.2%	47.2%	16.0%
Rifle Squad	33.8%	42.2%	23.4%
Rifle Platoon	22.1%	36.4%	40.9%

Key

1. Yes - Retrain.
2. Yes - Unless crew is highly trained.
3. No.

Here there is evidence that as the size of the unit increases, personnel turbulence including leadership rotation becomes less critical.

4. Question 4

This question attempted to determine the ratio between time to train and time to retrain.

Mean Response: 2.3 times longer to train than to retrain.

5. Question 5

This question provides various strategies for training in a unit where some, but not all of the personnel, have previously mastered a task. The respondent was asked to select the best approach to scheduling from 5 alternatives:

Responses:

The percentage of respondents selecting each alternative is:

- | | | |
|----|--|--------------|
| a. | Two separate periods of formal training -- one for initial training and one for retraining. | <u>16.2%</u> |
| b. | One formal period oriented to those who need re-training with self-paced/off duty instructions for the initial learners. | <u>2.3%</u> |
| c. | One formal period oriented to those who need initial training -- with those who need retraining being released for other activity early. | <u>10.4%</u> |
| d. | One formal period oriented toward those who need initial training -- all members attend and participate in the entire training period. | <u>18.5%</u> |
| e. | Two formal training periods: Period one oriented to and attended by initial learners only. Period two oriented toward all members and attended by the entire unit. | <u>52.0%</u> |

Alternative e. is the clear choice.

6. Question 6

The respondents were asked to rank order the training strategies they would employ if by virtue of resource constraints it became necessary to reduce training for achieving and maintaining fully combat-ready proficiency in Soldiers' Manual Tasks and/or ARTEP missions.

The rank orders assigned are listed below. A rank order of 1 connotes the most desirable course of action, i.e., the strategy to be implemented first in the event the training program must be reduced.

A rank order of 5 represents essentially, the last resort or the least desirable course of action.

<u>Rank Order</u>	<u>Mean Rank</u>	
2	2.44	a. Reduce repetitions of SM tasks:
3	3.13	b. Eliminate less critical SM tasks.
4	3.58	c. Reduce repetitions of all ARTEP missions evenly.
1	2.15	d. Reduce repetitions of ARTEP missions with the reductions being applied from less critical tasks to more critical tasks
5	3.61	e. Eliminate less critical ARTEP missions completely.

7. Question 7

The purpose of this question was to estimate the percentage increase in the frequency of training that would be necessary to maintain a fully combat-ready proficiency level if the majority of the E-1 through E-4 personnel in a unit were mental Category IV.^{1/} The basis for the comparison is a unit where the majority of E-1 through E-4 are Category III or higher.

Mean Response: 53.9% more frequency.

8. Question 8

This question addressed the same issue as No. 7, but asked for the estimated increase in time to train as opposed to increase in frequency.

Mean Response: 41.9% more time.

^{1/} Mental Category IV - AFQT score of 30 or lower.

This question has important implications for time and frequency correction techniques addressed in Part III, Unit Personnel Conditions. The sensitivity of this condition (not addressed in this survey) must be integrated analytically with the other correction factors before an accurate adjustment can be made.

APPENDIX A

PROCEDURES AND METHODOLOGIES

I. INTRODUCTION

This Appendix discusses in turn the development of the survey administration and the treatment of the data. Annex 1 to the Appendix contains a sample copy of the survey format, and Annex 2 describes Magnitude-Estimation Scaling, a primary methodological innovation in the conduct of such a survey.

II. DEVELOPMENT OF THE SURVEY FORMAT

The Battalion Training Survey was the means by which the judgments of selected experts in the field of Army training were obtained. Specifically sought were insights into the relative criticality of ARTEP missions and collective tasks, the time required to train these missions and tasks, the impact of various training detractors, and certain other miscellaneous data related to training issues.

The format for the Battalion Training Survey (see Annex 1) was developed through the joint effort of the staffs of the Actuarial Research Corporation and the Army Training Study. The survey is composed of 13 separate parts, as is displayed below:

Battalion Training Survey Components

<u>Part Number</u>	<u>Title</u>
IA, IB	Biographical Information
II	Collective Task Rating
III A	Unit Personnel Conditions
III B	Unit Trainer Conditions
III C	Unit Training Echelons
III D	Training Level Emphasis
III E	Individual Training
IV	Collective Task Times and Frequency
V	ARTEP Mission Ratings
VI	ARTEP Mission Training Time and Frequency
VII	Soldier's Manual Tasks
VIII	Additional Conditions
IX	Gunnery Programs

The development of each part is discussed herein in detail.

A. Biographical Information

Respondents were requested to provide anonymous biographical information in the first set of the Survey, IA. This information pinpointed key sub-groups of the sample. One additional item of information, the number of months in the current assignment (see Question 7) was added by the survey administrators to this pool of information during the actual polling sessions. The responses to the questions in Set IA establish the credentials of the respondents and form the foundation of all group comparison studies.

A separate biographical information section was designed for the respondents from the Sergeant Majors Academy. This set, IB, is an abbreviation of Set IA and requests only that information which is appropriate for a noncommissioned officer.

B. Collective Tasks

Collective tasks are functional areas of unit activities that are the building blocks of ARTEP mission performance, and are somewhat analogous to the tools in a mechanics tool box. For the Battalion training survey, 21 such collective tasks were derived by a functional analysis of each mission from the ARTEP 71-2 level 1 missions for all echelons. These 21 tasks were then verified for completeness and appropriateness by reviewing the corresponding field manual, FM 71-2. It should be noted that many of these collective tasks are all-pervasive with respect to the ARTEP missions.

Respondents were asked to make two types of judgments regarding these tasks.

1. Rate the relative criticality of the tasks, and
2. Estimate the training times and frequencies for each task.

Part II, Collective Task Rating, was designed as a Magnitude-Estimating Scaling (MAG ES) exercise (see Annex 2 for a brief description of the MAG ES procedure). In this Part, the respondents indicated the criticality of each collective task relative to one collective task that had been designated the reference item and assigned a value of 10. Four such reference items were selected as protection against the influence of an inappropriate reference item.

In making this selection, staff members of the Army Training Study selected tasks that they viewed as highly critical and of low criticality. These tasks were eliminated from the list of potential reference items, since the ideal reference item should fall toward the middle of the judgment scale. Four reference items were chosen at random from this list. A second safeguard, a random order of presentation of these tasks, was utilized to protect against an order effect.

In part III, the respondents were asked to indicate, for each collective task, the number of hours required for a training period, and the number of training periods per year (frequency)

required to achieve a 95% (fully combat-ready) proficiency level in all ARTEP 71-2 missions. Unit personnel conditions were specified in terms of current experience of percent of officer/NCO fill, personnel not present for training daily, turnover per quarter, and change in duty position per quarter.

<u>CONUS</u>	<u>Europe</u>	
30%	10%	Not present for training (daily, all grades)
20%	10%	Turnover per quarter (movement in and out of Bn)
40%	20%	Change in duty positions/quarter.

C. Training Detractors

The Battalion Training Survey focused on three types of unit training detractors: personnel not present for training (Part III-A-I), change in duty position (Part III-A-II), and trainer grade substitution (Part III-B). The following procedures were used in developing each of these three sets. First, the probable minimum and maximum level of the detractor was established. For example, it was determined that a minimum of 20% and a maximum of 60% change in duty position could be expected for the typical unit. A third point between these two points also was selected.

These three basic levels of training detractors were then converted into nine items by casting each in terms of achieving 95% proficiency, 85% proficiency, and 70% proficiency. The middle range item of the nine (that item which fell between the

minimum and maximum level of the training detractors with an 85% proficiency requirement) was designated the reference item.

The respondents were asked, in III-A, to indicate the frequency required in the performance of a collective task for each degree of the training detractor relative to the selected reference item, which had been given a frequency of 10. It was assumed that personnel not present for training and change in duty position are conditions that effect the frequency of unit training.

In III-B, the respondents were asked to indicate the time required for the performance of a collective task for each degree of trainer grade substitution relative to the reference item, which has been assigned a time of 2 hours. Here, it was assumed that trainer grade substitution would effect the time required for a training period.

Because of the highly abstract and difficult nature of these items, it was decided that a random ordering of items would further complicate the task of completing this section of the survey. For this reason, the level of the training detractor was held constant and presented from low to high while the proficiency requirements varied.

The underlying logic of each set can readily be seen when viewed with this type of ordering. When the level of the training

detractor is held constant and as proficiency requirements decrease, the training time/frequency requirements should remain constant or decrease. If the proficiency requirements are held constant and the level of the training detractor increases, the training time/frequency requirements should remain constant or increase.

In light of the aforementioned complexity of this section, it was decided that only those respondents who followed the logic discussed above would be included in the computation of these weights. To be included, a subject's response in Parts III-A and III-B were required to satisfy the following six rules:

1. The response to question 1 \geq the response to question 2 \geq the response to question 3.
2. The response to question 4 \geq the response to question 5 \geq the response to question 6.
3. The response to question 7 \geq the response to question 8 \geq the response to question 9.
4. The response to question 1 \leq the response to question 4 \leq the response to question 7.
5. The response to question 2 \leq the response to question 5 \leq the response to question 8.
6. The response to question 3 \leq the response to question 6 \leq the response to question 9.

D. Training Overlap

Parts IIIC and IIIE address the degree of overlap in training that occurs when an individual or a unit is training at higher echelons. Respondents were told to assume that the specified unit, when training an ARTEP mission, received a benefit of 1 from that training, and were then asked to indicate the relative training benefit to that unit at each higher echelon when training the same ARTEP mission.

E. Echelon Importance

Respondents were asked in Parts IIID to indicate the relative importance of the training echelons in terms of Battalion combat readiness. Here, the company level was assigned an arbitrary value of 10 and served as the reference item. Judgments of the importance of the remaining echelons were made relative to this value.

F. Maintenance Requirements

Part IIID also addressed the hours required weekly for maintenance activities. These activities were divided into two categories: maintenance of weapons, equipment, and vehicles, and maintenance training.

G. ARTEP Missions

The ten ARTEP 71-2 level 1 missions for battalion and company levels were incorporated in the Battalion Training Survey

in Parts V and VI. In addition, two squad level missions, patrolling and antiarmor ambush, and two supplemental missions, "passage of lines" and "crossing water obstacles" were included. These four additional missions were considered sufficiently important from an overall training context to be included in the list of ARTEP missions.

As with collective tasks, respondents were asked to make judgments about both the relative importance of these missions, and subsequently in Part VI, the time and frequency of training required. In Part V, ARTEP Mission Rating, the 14 ARTEP missions were arrayed in a random order. Two reference items were chosen, using the same procedure as was used for the collective tasks reference items (Part II). Respondents were asked to rate the importance of each ARTEP mission relative to the reference item, which had been assigned a value of 10.

The respondents were asked in Part VI to indicate the number of hours per period and the number of training periods per year required to achieve a 95% proficiency level in each of these ARTEP missions. The same training detractors were specified for the missions as were specified for the collective task time and frequency exercise (Part IV).

H. Soldier's Manual Tasks

The training requirements for Soldier's Manual Tasks were addressed in Part VII of the survey. The MOS 11B, 11C, 11D,

11E (19E/F), and 16P Soldier's Manual Tasks were grouped into 73 general categories of functional activities. Respondents were asked to state the time per training period and the number of training periods per year required to achieve 95% proficiency (fully combat-ready). No personnel conditions were specified.

I. Additional Conditions

Part VIII of the Battalion Training Survey deals primarily with miscellaneous training issues requested by the ARTS group.

Part VIII includes two items that deal with unit personnel conditions. In question 1, respondents were asked to specify, in percentage terms, how much less effective is a leader who is one grade below the grade authorized by TOE. In Question 3, the requirement for crew retraining resulting from a change in duty position is explored. In 3a, respondents were asked to specify the actual number of crew changes, by crew type, that necessitate retraining of the crew. 3b addresses the need for retraining if the crew leader changes.

Question 2 deals with the incremental training (in percentage) time required to regain proficiency if the ideal period between programmed instruction is exceeded by a specified period of time. Question 4 is designed to establish how much longer it takes to train than retrain. Question 5 allows the respondent to select the optimal schedule strategy for a unit in which some but not

all personnel have mastered a task. Question 6 is a rank ordering of training strategies or program decrement options. Questions 7 and 8 deal with the impact of Mental Category IV personnel on the training schedule.

J. Gunnery Programs

Part IX requests training frequency requirements of gunnery training programs for a tank company, antitank platoon, 81mm Mortar platoon, 107mm Mortar platoon, scout platoon, and red eye platoon. A frequency was requested for 95% proficiency, 85% proficiency, and 70% proficiency. Respondents were asked, in the test sessions, to give two frequency estimates for each proficiency; one for "on-cycle" training, and one for "off-cycle" training.

III. SURVEY ADMINISTRATION

A. Characteristics

Three characteristics of the survey administration procedure contributed to the efficacy of the data collection effort:

1. Specification of the Rating/Judgment Context

Training typically occurs under conditions and constraints heavily influenced by the aforementioned training detractors. The training goals or standards to be achieved are not always easy to specify and convey. For this survey, the optimum goal was described as being sufficiently proficient to achieve success against a sophisticated and well-trained threat (alternately referred to as being fully combat ready or possessing a proficiency of 95% of the TOE capability of the unit weapons and personnel).

For certain parts of the survey, the specific levels of training detractors and/or proficiency were established by the ARTS group, as appropriate. These conditions may be reviewed in the sample survey booklet in Annex 1 to this Appendix.

2. Coordinated Administration by the ARTS Group

The data collection teams in Europe and CONUS included the ARTS group members who participated in the formulation of the survey goals, content, and format. They were thus well informed about the subject and procedures for administration. During the final coordination session for the data collection, provisions were made for

continual phone communication among team members in the event procedural changes were necessitated by the exigencies at the test sites.

3. Sequencing of the Sets in the Survey

To adequately cover the many issues in the survey, approximately 3 - 5 hours of time was required of each respondent in group sessions (usually Battalion groups). The influence of fatigue and progressive inattention were moderated by placing the more demanding tasks early in each of two sessions and by separating the sessions with a 30 - 40 minute coffee break.

B. Locale Modification of Survey Context (Assumptions or Conditions)

The context (assumptions or conditions) concerning kinds and amounts of training detractors for Sets IV and VI, which requested estimates of training time and frequency, was modified for Europe to better reflect the current actual experiences in that environment, i.e.,

<u>Europe</u>	<u>CONUS</u>	
10%	30%	Not present for training (daily, all grades)
10%	20%	Turnover per quarter (movement in and out of Bn)
20%	40%	Change in duty positions/quarter

In addition, ten (10) of the students at the Army War College who had just recently returned from Europe assignments, were instructed to use the "Europe assumptions" since this basis was most consistent with their recent experience.

C. Selection of "Expert Raters"

The 269 respondents represent senior battalion-level experience. To further insure the credibility of the core group of raters used in the preparation of the values derived from this survey, a minimum requirement of at least three years of Armor and/or Mechanized-Infantry experience was established. The final expert group numbered 176, distributed as follows:

49	3rd Armored Div (Europe)
34	4th Infantry Div
42	Command & General Staff College
28	Army War College
<u>23</u>	Sergeant Majors Academy
176	Total

IV. TREATMENT OF DATA

A. Data Base Audit

All responses were keypunched and verified. In view of human failings, this verification is not always sufficient to assure an error free data base, since corrected cards may not be removed. A computer audit was made to determine the presence of all data cards for each respondent and the existence of any duplications. Each survey had been precoded and examined by Actuarial Research Corporation prior to punching to establish upper value limits and to define punch card fields. The raw distributions of the 9 parts were examined to insure that the expected score ranges were within bounds.

B. Determination of Weights

The calculations of the relative weights in Sets II and V involved finding the geometric mean of all responses to each item. Each of these geometric mean weights was then divided by the weight of that item which had the lowest weight (a normalizing procedure). Percent weights were calculated as well.

Differences in item weights between various subgroups were determined as follows. The raw scores were converted to \log_{10} scores and means and variances calculated. The t-test subprogram calculates the F ratio to decide if pooled or separate variance estimates should be used in the determination of the t-value. The log transform is

necessary because the values assigned to the items by the respondents reflect magnitudes which have consistently been shown to reflect power functions. (See Annex 2 for a discussion of the attributes of magnitude estimation scales.) With the scores converted to a log normal distribution, it is possible to perform various analytic treatments which would be incorrect if the geometric means, alone, were used.

The geometric means (weights) of the items can be displayed in different ways according to the convenience of the user. A usual step is to normalize on the lowest value so that the ratios among the items are more easily discerned. Another way is to convert each weight to a percentage of the total of all item weights for the group of subjects being examined. Such multiplications are for convenience; they do not alter the relative values.

Unless the groups being compared were both normalized on the same item, a graphical representation tends to yield apparently larger values for the high values. Using percentages, this visual distortion is avoided. The figures used in the body of the report are based on percentages. The ratios among the percentages are identical to the ratios among the normalized weights.

C. Reference Item Characteristics

Weights were computed for the respondents using each of the reference items. The rank order intercorrelations for the reference

items are shown in Table A-I for Parts II and Set V. Also shown are the rank correlations with the item order and the item ranks based on all cases. The intercorrelations range from .77 to .91, whereas the correlations with item order are not significant. The initial randomizing of the item order appears to have achieved its purpose of minimizing an order effect.

The distribution of reference items among all respondents is shown in Table A-II. The percentages vary only a little from the optimum flat distribution of 25%. Within each of the five groups surveyed, a slightly greater unevenness can be seen.

There was no opportunity before the survey administration to obtain prior estimates of the item weightings to aid in the selection of reference items. From the survey results reference items 7, 5, 6, and 19 in Part II ranked fifth, tenth, twelfth, and nineteenth (out of 21 items). For Part V, reference items 11 and 14 ranked thirteenth and eighth (out of 14 items). Weights were computed for the sub-groups of respondents that used the different reference items. The instances where a significant difference occurred between mean log scores for each item can be seen in Table A-III. A reference item which has a high value (item 7) tends to reduce the judged weights and vice versa (for item 19).

Since the reference items were quite evenly distributed among the respondents, the weights based on all subjects are not

TABLE A-I

RANK ORDER CORRELATIONS AMONG WEIGHTS BASED
ON DIFFERENT REFERENCE ITEMS

		5	6	7	19	Item Order	All
Collective Task Reference Items	5						
	6	.91*					
	7	.84*	.77*				
	19	.89*	.88*	.83*			
	Item Order	.23	.22	.20	.36		
	All	.94*	.93*	.92*	.95	.26	
Weights Based on N of:		38	47	46	41	"21"	172

		11	14	Item Order	All
ARTEP Mission Reference Item	11				
	14	.88*			
	Item Order	.13	-.02		
	All	.95*	.96*	.02	
Weights based on N of:		90	81	"14"	171

* $p \leq .01$

TABLE A-II
Distribution of Reference Items Used

Part II

Group	Reference Items				Total
	5	6	7	19	
CONUS Div.	6	11	8	9	34
Europe Div.	10	14	12	10	46
C & GSC	9	10	15	8	42
S.M.A.	7	4	4	7	22
A.W.C.	6	8	7	7	28
Total	38	47	46	41	172

Part V

Group	Reference Items			Total
	11	14		
CONUS Div.	18	15		33
Europe Div.	23	25		48
C & GSC	21	20		41
S.M.A.	11	11		22
A.W.C.	17	10		27
Total	90	81		171

TABLE A-III

SIGNIFICANT DIFFERENCES* OF REFERENCE ITEMS

Item	Collective Task Reference Items						ARTEP Mission Reference Items	
	5 v 6	5 v 7	5 v 19	6 v 7	6 v 19	7 v 19	11 v 14	
1	>	>			<	<	>	
2		>				<	>	
3								
4						<	>	
5			<		<	<	>	
6					<		>	
7		>		>		<	>	
8							>	
9		>			<	<	>	
10		>		>		<	>	
11		>						
12		>		>		<	>	
13		>				<	>	
14		>		>			>	
15						<		
16						<		
17								
18								
19								
20		>						
21								

* Entries show mean log differences beyond 5% level of confidence for the t's. The open end of the symbol indicates the item with the higher mean.

particularly distorted. In addition, it was noted above that the rank correlation of item weights among the reference items used was high. In examining any differences between groups of respondents an elevation of weights can occur if for instance a disproportionately small number used reference item 7, as in the case of SMA.

D. Exploratory Studies to Determine Time and Frequency Data Treatment

Prior to the final data processing, exploratory efforts were undertaken to examine a selected subset of items to observe the nature of the response distributions, to assess the need for eliminating extreme a/o aberrant scores, and to determine the manner in which the time and frequency information could be most appropriately summarized. This preliminary study also focused on the potential differences among particular subgroups of interest.

1. Truncation of the Values for Training Time and Frequency (Parts IV, VI, and VII)

A subset of collective tasks and ARTEP missions from Parts IV and VI was selected for examination based on the weighting of importance derived from Parts II and V. An item with relatively high weight and one with low weight plus two items from the mid-range were selected by the study group for inclusion in the substudy. The study group also identified 16 Soldier Manual tasks from Set VII that corresponded to the selected collective tasks.

An examination of histograms reflecting the distributions suggested that there were two distributions present in the data. The clusters of extreme scores suggested that some respondents may have had a different orientation concerning the number of hours required per session and the number of sessions required per year. The judgment of the ARTS group was that these extreme responses or "outliers" reflected a highly impractical demand on the training resources. To determine if this was so, a reconstruction was made from the data base to identify, by type, those respondents from the 3rd Division who most frequently gave extreme responses. A subsequent visit by the study group was to interview these "outliers" to determine if the assignment of extreme scores was simply an exaggeration of training needs or a carefully thought out requirement for intensive training to achieve 95% proficiency.^{1/}

A formal, systematic procedure was adopted to eliminate the extremes. Any respondent whose value for an item was equal or greater than the group mean plus one standard deviation was ignored in the calculation of training hours and frequency for that item. After truncation a new mean was calculated.

^{1/} It was learned, after the analyses were finished, that the extreme values were given for fear that an arbitrary reduction of 50% or more would be made.

2. Specification of Mean, Time, Frequency, and Year Total Hours

In the estimation of training period hours and the frequency of training periods per year, it is logical to assume the respondents have in mind a year total hour training requirement necessary to achieve a given level of proficiency. This "Year total hour" can be achieved with various combinations of hours and frequency. For example, 96 hours of training in a year can be achieved by using 4 hour training sessions repeated 24 times or 12 hour training sessions repeated 8 times. Such a model requires that hours and frequency will be negatively correlated. The initial study showed this was not the case. Hours and frequency are not correlated, as shown on Table A-IV. Based on this information, it was concluded that the time and frequency estimates were independently determined. Thus, the best estimate of hours needed for training was the mean value and likewise for the frequency of training periods. To arrive at a "year total hour" requirement, the mean hour (to the nearest tenth) was multiplied by the mean frequency (to the whole number) to obtain the estimated year total hours required for the task or mission.

This procedure must be carefully understood since previously the product of the means need not equal the mean of the products. The distinction made is a logical one based on the manner in which the respondents assigned values.

TABLE A-IV
PRODUCT MOMENT CORRELATIONS OF TRAINING HOURS AND FREQUENCY

	Bn Level	Co Level	Plt Level	Sqd Level	Bn Level	Co Level	Plt Level	Sqd Level
Collective task								
9	.41*	.08	-.13	-.14	.29*	.00	-.09	.19
10	.23	.39*	.33*	.26	.29*	.00	-.01	.18
13	.04	-.04	.11	.01	.14	.07	.45*	-.15
17	.20	.15	.10	-.04	.14	-.07	-.12	-.07
ARTEP Mission								
2	.19	-.01	.18	-.01	.05	.16	.22	.17
4	.14	.52*	.43*	.23	.34*	.60*	-.04	.26
6	.30*	.10	.26	.03	-.06	-.13	-.02	.15
8	.28	.07	.18	.26	.24*	.18	.13	.03
Soldier's Manual Task								
4	-.18				.20			
5	-.08				-.02			
6	.19				-.16			
7	-.27				-.17			
8	-.14				-.16			
9	-.05				-.20			
10	-.16				-.17			
12	-.07				.14			
13	-.12				.09			
34	-.07				-.18			
36	-.05				.01			
37	-.11				.05			
40	.11				-.03			
41	.06				.16			
51	-.02				-.17			
65	.03				-.14			

It can be noted that the correlations among hour estimates and among frequency estimates are consistently high. A parallel follow-up survey of Armor school respondents shows similar results, suggesting that the values assigned reflect the practical training scheduling issues wherein daily scheduling is considered independently from yearly occurrences (frequency).

A separate inquiry is suggested from this outcome wherein a respondent is given a total year hour maximum and is requested to allocate this year's effort into combinations of training session hours and frequency.

E. Training Detractors

Geometric means and corresponding 95% confidence intervals were calculated from scores assigned to the items in Parts IIIA and IIIB. The mean values were then converted to factors needed to adjust the frequency and time data (Parts IV, VI, and VII) respectively in the following manner:

First, the values in each set were "normalized" by dividing by the mean response to the 4th question, the base condition as stated in the survey.^{1/} A method for fitting the three data points for each of the three proficiency requirements (80%, 85%, and 90%) to an exponential curve was developed. This method involved an iterative procedure to solve a set of three simultaneous equations. The exponential

^{1/} This base condition was changed in the test session, and thus a second normalizing procedure was required.

fit yielded results reliable to four decimal places between the range of unit personnel conditions selected in the survey. Mean values for any specified percent of training detractor could now be found.

Next, in order to accomplish the second normalizing procedure, the base condition on which judgments of time and frequency (Sets IV, VI, and VII) were made was located on the exponential curve. For "Not present for training" (Set III-A-1), the base condition was 25%. The base condition for "Change in duty position" was 35%, and for "Trainer grade substitution" it was 15%.

The geometric means and 95% confidence intervals derived in each set were then divided by the geometric mean of the base condition to produce the final training detractor adjustment factors.

An exponential curve was derived for the new data points. The factors for the intermediate proficiency levels of 90%, 80%, and 75% were graphically interpolated. The results of these calculations are the factors with which time and frequency data can be adjusted.

It should be noted that training detractor adjustment factors are restricted to the training detractor range defined by the empirical data points.

F. Training Overlap

Time and frequency factors for unit training overlap were derived by calculating the geometric mean of the response to each item. In addition, the mean response of field grade officers and company grade officers from the two divisions were computed.

C. Echelon Importance

The overall importance of each training echelon, from individual to battalion, was found by calculating the geometric mean of the responses to Set IIID, "Training Level Emphasis." Each mean was then divided by the calculated mean for the battalion level, thus giving an importance factor to each echelon in terms of a factor of one for the battalion level.

H. Additional Conditions

Issues involving the training schedule, found in Part VIII can be divided into two groups, defined by the treatment of the data. In Part VIII, responses to question 1, 2, 3a, 4, 7, and 8 were treated in the following manner. First, the arithmetic mean and standard deviation was calculated. All responses greater than one standard deviation from the mean were classified as aberrant responses and were thus removed from consideration. All remaining responses were reaveraged. This mean was established as the best estimate of the respondents.

Questions 3b, 5, and 6 were not compatible to the above treatment, and therefore all responses were accepted. In all cases, responses are summarized in terms of frequency.

For question 6, a frequency distribution of the combinations of training strategies and program decrements (from first to last) was viewed as well. Respondents actually selected 66 of the 120 total

combinations possible. As can be seen in Table VI there was no "consensus combination."

I. Maintenance Requirements

The time required (hours per week) for maintenance of weapons, equipment, and vehicles, and maintenance training was derived by first finding the arithmetic mean and standard deviation of the responses to Part IIID, "Maintenance." Again, all responses greater than one standard deviation from the mean were eliminated from the pool of responses. Finally, the arithmetic mean of the remaining response was calculated. This procedure was followed to be consistent with the treatment of all "time" data in the survey.

A comparison was also made of the responses of Armor and Infantry Branch respondents.

TABLE A-V

Program Decrements: The Ten Most Frequently
Used Combinations, By Question Number

<u>Combination</u>	<u>n</u>	<u>%</u>
_2, 4, 3, 1, 5	15	8.5
_1, 4, 3, 2, 5	10	5.7
_2, 5, 3, 1, 4	8	4.5
_1, 2, 4, 3, 5	8	4.5
_1, 3, 5, 2, 4	7	4.0
_2, 4, 5, 1, 3	6	3.4
_1, 2, 5, 3, 4	5	2.8
_1, 3, 4, 2, 5	5	2.8
_2, 3, 4, 1, 5	5	2.8
_3, 4, 2, 1, 5	5	2.8

KEY: 1 = Reduce repetitions of SM tasks
 2 = Eliminate less critical SM tasks
 3 = Reduce repetitions of all ARTEP missions evenly
 4 = Reduce repetitions of ARTEP missions, with the reductions
 being applied from less critical task to more critical
 tasks
 5 = Eliminate less critical ARTEP missions completely

ANNEX 1

THE BATTALION TRAINING SURVEY

THIS IS YOUR ID NUMBER.
IT SHOULD BE ENTERED AS
APPROPRIATE ON THE UPPER
RIGHT HAND CORNER OF ALL
YOUR QUESTIONNAIRES.

ID # 554
KEEP THIS NUMBER.

(Blank)

READ CAREFULLY

Please complete the following:

1. Your rank: (check 1)

LTC

MAJ

CPT

LT

Other _____
(specify)

2. Basic Branch: (check 1)

Armor

Infantry

Other _____
(specify)

3. Total years service _____

4. Years in Armor _____ a/o Mechanized-Infantry _____

5. You are currently serving in a unit or a school: Fill in the following:

Div.# _____ Bn.# _____ Co. _____ OR School _____
(specify)

6. If in a unit, at what level are you currently serving?

Bn

Co

Other _____
(specify)

7. What is your current assignment? (check only one)

Bn CO

Bn XO

Bn S-3

S-3 Staff

Tank/Rifle Co CO

Cbt Spt Co CO

School Staff & Faculty

Student

Other _____
(specify)

PLEASE DO NOT SIGN YOUR NAME!

(Blank)

READ CAREFULLY

Please complete the following:

1. Your rank: (check 1)

E-9

E-8

E-7

Other _____
(specify)

2. Basic Branch: (check 1)

Armor

Infantry

Other _____
(specify)

3. Total years service _____

4. Years in Armor _____ a/o Mech-Infantry _____

5. School presently attending _____
(specify completely)

PLEASE DO NOT SIGN YOUR NAME!

(Blank)

COLLECTIVE TASK RATING

The Mechanized Infantry Tank Task Force (ARTEP 71-2) is expected to be able to perform all the ARTEP missions to be fully combat ready. To do this, it must have proficiency in many areas (as listed on the next page). The training goal is to achieve outstanding performance levels in all of these collective tasks, but often in practice, there are time and resource restrictions that prevent the attainment of such high proficiency in all areas.

When resources are limited, it is necessary to consider if different areas should be emphasized in training. No area can be entirely ignored, but it may be your judgment that some areas are more critical than others for successfully completing all the ARTEP missions.

Following the procedure below, you are asked to judge the relative criticality of the collective tasks in terms of how critical each one is to Mechanized Infantry/Tank Task Force's ability to execute all the ARTEP missions in order to become fully combat ready.

PROCEDURES

1. The collective tasks listed on the next page are in random order.
2. One area, or item, has been assigned a value of 10. You are to use this as your Comparison Item.
3. Compare the first item on the list with the Comparison Item and judge if it is more, less, or equally critical for accomplishing all the ARTEP missions.
 - a. If it is more critical, enter the number that shows how much less critical it is than the Comparison Item. Some examples:
 - Enter 30 if it is 3 times as critical
 - Enter 12 if it is 20% more critical
 - Enter 200 if it is 20 times as critical, etc.
 - b. If it is less critical, enter the number that shows how much less critical it is than the Comparison Item. Some examples:
 - Enter 2.5 if it is 1/4th as critical
 - Enter .1 if it is 1/100th as critical
 - Enter 6 if it is 40% less critical, etc.
 - c. If it is equally critical, simply enter 10.

4. Next, compare the second item in the list with the first item in the list.
5. Compare each item to the Comparison Item following the above procedure.
6. You may use ANY POSITIVE NUMBER or FRACTION. Do not use zero or negative numbers.
7. After you have completed these ratings, please complete the information items on the following page.

- _____ 1. Perform tactical movements.
- _____ 2. Employ cover and concealment.
- _____ 3. Employ special techniques for NBC operations.
- _____ 4. Employ organic mortars.
- _____ 5. Employ communications and electronic equipment, including operations in an EW environment.
- _____ 6. Perform reconnaissance.
- _____ 7. Employ organic antitank weapons.
- _____ 8. Employ special techniques for combat in built-up areas.
- _____ 9. Employ fire and maneuver/movement.
- _____ 10. Organize and prepare battle positions, including mines and obstacles.
- _____ 11. Employ special techniques for operating at night and under limited visibility.
- _____ 12. Perform Leader/Commander Tasks
- _____ 13. Employ fighting vehicles.
- _____ 14. Employ combat service support (all Admin/Log activities).
- _____ 15. Perform security and intelligence operations.
- _____ 16. Reorganize; consolidate.
- _____ 17. Employ special techniques for operating in a hostile TAC air environment.
- _____ 18. Breach minefields and obstacles.
- _____ 19. Employ organic small arms.
- _____ 20. Coordinate and employ non-organic combat support assets.
- _____ 21. Maintenance of weapons, equipment, and vehicles.

(B1-4A)

(A4)

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ARMY TRAINING STUDY BATTALION TRAINING SURVEY VOLUMES

2/4

1 AND 2(U) ACTUARIAL RESEARCH CORP FALLS CHURCH VA

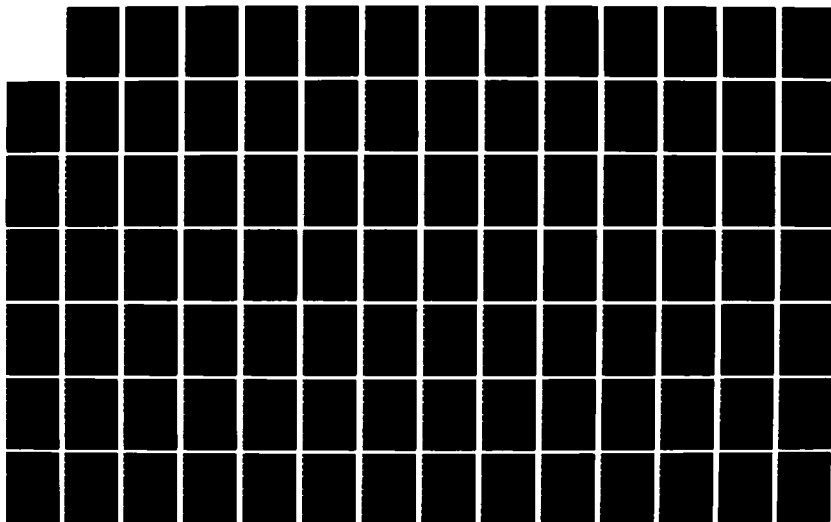
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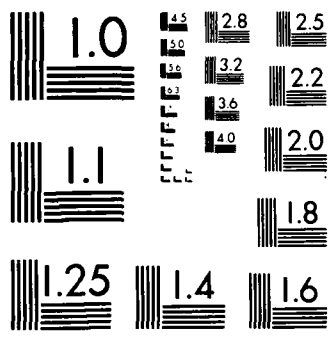
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

IIIA

UNIT PERSONNEL CONDITIONS

Your unit, at any given time is affected by two personnel conditions - (1) personnel not present for training and (2) changes in duty position. These conditions affect the frequency of training required to maintain proficiency. In spite of these conditions, you must maintain a proficiency level of fully combat ready (95%). As these personnel conditions change, you must accept lower training proficiency or adjust the frequency of training to maintain your required proficiency goal.

Fully Combat Ready = 95% proficient, or
 Combat Ready = 85% proficient, or
 Marginally Combat Ready = 70% proficient

SET I

The following list specifies personnel conditions with varying degrees of severity and varying degrees of proficiency requirements. Assume it takes 10 repetitions a year of a certain collective task to achieve combat ready proficiency with 30% of the unit not present for training daily (See Item 5). You are asked to indicate the frequency of training required for each of these remaining conditions to achieve the specified proficiency level for the assumed collective task in light of the frequency of 10 required for the one condition.

FREQUENCY
(ANNUAL)

PERSONNEL NOT PRESENT FOR TRAINING

- | | |
|-----------|--|
| _____ | 1. Achieve a fully combat ready (95%) proficiency with 15% not present for training daily |
| _____ | 2. Achieve a combat ready (85%) proficiency with 15% not present for training daily |
| _____ | 3. Achieve marginally combat ready (70%) proficiency with 15% not present for training daily |
| _____ | 4. Achieve a fully combat ready (95%) proficiency with 30% not present for training daily |
| <u>10</u> | 5. Achieve a combat ready (85%) proficiency with 30% not present for training daily |
| _____ | 6. Achieve marginally combat ready (70%) proficiency with a 30% not present for training daily |
| _____ | 7. Achieve a fully combat ready (95%) proficiency with 60% not present for training daily |
| _____ | 8. Achieve a combat ready (85%) proficiency with 60% not present for training daily |
| _____ | 9. Achieve marginally combat ready (70%) proficiency with a 60% not present for training daily |

SET II

The following list specifies personnel conditions with varying degrees of severity and varying degrees of proficiency requirements. Assume it takes 10 repetitions a year of a collective task to achieve combat ready proficiency with a 40% change in duty position quarterly (See Item 5). You are asked to indicate the frequency of training required for each of these remaining conditions to achieve the specified proficiency level in light of the frequency of 10 required for the one condition.

Frequency (annual)	Change In Duty Position
_____	1. Achieve a fully combat ready (95%) proficiency with a 20% change in duty position
_____	2. Achieve a combat ready (85%) proficiency with a 20% change in duty position
_____	3. Achieve a marginally combat ready (70%) proficiency with a 20% change in duty position
_____	4. Achieve a fully combat ready (95%) proficiency with a 40% change in duty position
<u>10</u>	5. Achieve a combat ready (85%) proficiency with a 40% change in duty position
_____	6. Achieve a marginally combat ready (70%) proficiency with a 40% change in duty position
_____	7. Achieve a fully combat ready (95%) proficiency with a 60% change in duty position
_____	8. Achieve a combat ready (85%) proficiency with a 60% change in duty position
_____	9. Achieve a marginally combat ready (70%) proficiency with a 60% change in duty position

IIIB

UNIT TRAINER CONDITION

Your unit at any given time is normally short leaders/trainers. For example, it may be necessary to substitute a one grade lower trainer (officer and NCO) in order to accomplish training. This affects the time required to achieve proficiency. In spite of this, you must strive to achieve a proficiency level of fully combat ready (capable of defeating a sophisticated and highly trained threat). As this substitution becomes more severe, it may be necessary to either accept a training schedule that will result in a proficiency level of combat ready or marginally combat ready, or adjust time per training session and maintain a proficiency level of fully combat ready.

The following is a list of varying degrees of trainer grade substitution and varying degrees of proficiency requirements. Assume it takes 2 hours of training on a collective task to achieve combat ready proficiency with a 1 grade lower substitution of 25% officer/NCO (See item 5). You are asked to indicate the time per training session required for each of the grade substitutions described in the list in order to achieve the specified proficiency level in light of this 2 hour requirement.

TIME (hours)	DEGREE OF TRAINER GRADE SUBSTITUTION
_____	1. Achieve a fully combat ready (95%) proficiency with a 1 grade lower trainer substitution of 10%.
_____	2. Achieve a fully combat ready (85%) proficiency with a 1 grade lower trainer substitution of 10%.
_____	3. Achieve a marginally combat ready (70%) proficiency with 1 grade lower trainer substitution of 10%.
_____	4. Achieve a fully combat ready (95%) proficiency with a 1 grade lower trainer substitution of 25%.
<u>2</u> _____	5. Achieve a combat ready (85%) proficiency with a 1 grade lower trainer substitution of 25%.
_____	6. Achieve a marginally combat ready (70%) proficiency with a 1 grade lower trainer substitution of 25%.
_____	7. Achieve a fully combat ready (95%) proficiency with a 1 grade lower trainer substitution of 40%.
_____	8. Achieve a combat ready (85%) proficiency with a 1 grade lower trainer substitution of 40%.
_____	9. Achieve a marginally combat ready (70%) proficiency with a 1 grade lower trainer substitution of 40%.

IIIC

UNIT TRAINING ECHELONS

The following three sets of items describe units involved in training at various echelons. If a unit receives a training benefit of one (1) from training on a particular mission when oriented on its echelon, how much more or less beneficial is training oriented on a higher echelon when the unit is performing this same mission? If it is twice as beneficial to the unit, enter 2. If it is one-third as beneficial, enter 3. If it is equally beneficial, enter 1.

SET I

- _____ 1. Squad/tank crew training in a battalion exercise
- _____ 2. Squad/tank crew training in a company exercise
- _____ 3. Squad/tank crew training in a platoon exercise
- 1 _____ 4. Squad/tank crew training in a squad/tank crew exercise

SET II

- _____ 1. Platoon training in a battalion exercise
- _____ 2. Platoon training in a company exercise
- 1 _____ 3. Platoon training in a platoon exercise

SET III

- _____ 1. Company training in a battalion exercise
- 1 _____ 2. Company training in a company exercise

IIID

TRAINING LEVEL EMPHASIS

To achieve over all battalion combat readiness, at which level should training be emphasized? The company level has been assigned a value of 10. How much more or less important is it to train at the other levels?

_____	Battalion
<u>10</u>	Company
_____	Platoon
_____	Squad
_____	Crew
_____	Individual

MAINTENANCE

1. How much time should your unit spend on maintenance of weapons, equipment and vehicles each week?

_____ hours

2. How much time should your unit spend on maintenance Training each week?

_____ hours

IIIE

INDIVIDUAL TRAINING

An individual receives benefit of one (1) from a single (1) training session on a particular Soldier's Manual Skill. How much more or less benefit is he likely to receive while practicing that skill when training collectively at varying echelons? For example, if it is twice as beneficial to the individual, enter 2. If it is one-quarter as beneficial, enter .25, or if it is equally beneficial, enter 1. You may use any number.

- 1 1. Individual training in an individual training exercise.
- 2. Individual training in a squad/tank crew training exercise.
- 3. Individual training in a platoon training exercise.
- 4. Individual training in a company training exercise.
- 5. Individual training in a battalion training exercise.

IV

COLLECTIVE TASK TIMES AND FREQUENCY

To enable the Mechanized Infantry/Tank Task Force (ARTEP 71-2) to achieve a given level of proficiency in the collective tasks (shown in the table below), a precise scheduling of training periods is necessary. Such planning depends on valid estimates of the time (hours) acquired for each period and the number of periods (frequency) that must occur each year.

In the table below, you are asked to enter for each unit, for each collective task:

- a. The number of hours required for a training period, and
- b. The number of times per year (frequency) the training period must be repeated

in order to achieve a fully combat ready (95%) proficiency level in the ARTEP 71-2 missions, i.e., the ability to successfully execute all ARTEP tasks to 95% of the TOE capability of the unit, weapons and soldiers.

ASSUME: 85% officer/NCO fill
30% not present for training (daily all grades)
20% turnover per quarter (movement in and out of Bn)
40% change in duty positions/per quarter

Keep in mind that these collective tasks are used in some or all of the ARTEP missions. For example, fire and maneuver is trained in attack, defense, delay etc. Ensure that your estimate includes an allowance for teaching all applications of the collective task.

Note: Enter NA if the collective task should not be trained at a particular level

TRAINING TIME REQUIRED TO MAINTAIN
FULLY COMBAT READY (95% Proficiency)

Collective task	Bn level		Co level		Plt level		Sqd level	
	Hrs. ea per- iod	Nr per yr.	Hrs. ea per- iod	Nr per yr.	Hrs. ea per- iod	Nr per yr.	Hrs. ea per- iod	Nr per yr.
1. Perform tactical movements								
2. Perform security and intelligence operations								
3. Employ cover & concealment								
4. Coordinate & employ non-organic combat support assets								
5. Employ organic small arms								
6. Employ fighting vehicles								
7. Employ organic antitank wpns								
8. Employ organic mortars								
9. Employ fire & maneuver/movement								
10. Perform reconnaissance								
11. Reorganize; consolidate								
12. Employ special techniques for operating at night & under limited visibility								

**TRAINING TIME REQUIRED TO MAINTAIN
FULLY COMBAT READY (95% Proficiency)**

Collective task	Bn level		Co level		Plt level		Sqd level	
	Hrs. ea per-iod	Nr per yr.	Hrs. ea per-iod	Nr per yr.	Hrs. ea per-iod	Nr per yr.	Hrs. ea per-iod	Nr per yr.
13. Employ special techniques for NBC operations								
14. Employ special techniques for combat in built-up areas								
15. Employ special techniques for operating in a hostile TAC air environment								
16. Employ communications & electronic equipment, incl. wpns in EW environment								
17. Organize and prepare battle positions, including mines & obstacles								
18. Breach minefields and obstacles								
19. Employ combat service support (all Admin/log activities)								
20. Perform leader/commander skills								

(Blank)

ARTEP MISSIONS RATINGS

The Mechanized Infantry/Tank Task Force (ARTEP 71-2) is expected to be able to perform all the ARTEP missions with such proficiency that it can achieve success against a very sophisticated and extremely well-trained threat. Often in practice there are time and resource restrictions that prevent the attainment of this required fully combat ready (95%) level of proficiency for every prescribed type of mission (i.e., ability to successfully execute all ARTEP tasks to 95% of the TOE capability of the unit, weapons and soldiers). A practical alternative is to emphasize training for some missions and still achieve capability in the other missions.

Following the procedure below, you are asked to judge the relative importance to train for each type of mission.

PROCEDURE

1. The missions listed on the next page are in random order.
2. One area, or item, has been assigned a value of 10. You are to use this as your Comparison Item.
3. Compare the first item on the list with the Comparison Item and judge if it is more, or less, or equally important to train for it.
 - a. If it is more important, enter the number that shows how much more important it is than the Comparison Item. Some examples:
 - O Enter 30 if it is 3 times as important
 - O Enter 12 if it is 20% more important
 - O Enter 200 if it is 20 times as important, etc.
 - b. If it is less important, enter the number that shows how much less important it is than the Comparison Item. Some examples:
 - O Enter 2.5 if it is 1/4th as important
 - O Enter .1 if it is 1/100th as important
 - O Enter 6 if it is 40% less important, etc.
 - c. If it is equally important, simply enter 10.
4. Next, compare the second item in the list with the Comparison Item in the same manner.
5. Compare each in turn to the Comparison Item following the above procedure.
6. You may use ANY POSITIVE NUMBER OR FRACTION. Do not use zeros or negative numbers.

- _____ 1. Exploitation
- 2. Delay
- _____ 3. Disengage (under pressure)
- 4. Passage of lines
- _____ 5. Patrolling (reconnaissance and combat)
- 6. Deliberate attack
- _____ 7. Night attack
- 8. Prepare a strong point
- _____ 9. Hasty attack
- 10. Defense
- _____ 11. Crossing water obstacles, i.e., river crossing
- _____ 12. Defense of a built-up area
- 13. Antiarmor ambush
- 10 _____ 14. Movement to contact

VI

ARTEP MISSION TRAINING TIME AND FREQUENCY

To achieve a specified proficiency level in executing the missions in ARTEP 71-2, The Mechanized Infantry/Tank Task Force, the number of training periods required per year will vary according to both the unit level at which the training is done and the mission. The level of proficiency to be achieved also will affect the number of training periods required.

In the table below, you are asked to enter for each ARTEP mission shown:

- a: The number of hours required for a training period (not preparatory training time, time only to run the ARTEP mission).
- b: The number of times per year (frequency) the training period must be repeated in order to achieve a fully combat ready (95%) proficiency level in the ARTEP 71-2 missions, i.e., ability to successfully execute all ARTEP tasks to 95% of the TOE capability of the unit, weapons and soldiers.

ASSUME: 85% officer/NCO fill
 30% not present for training (daily, all grades)
 20% turnover per quarter (movement in & out of Bn)
 40% change in duty positions per quarter

Note: Enter NA if the training should not be done at a particular unit level.

TRAINING TIME REQUIRED TO MAINTAIN
FULLY COMBAT READY (95% Proficiency)

	Bn level		Co level		Plt level		Sqd level	
	Hrs. ea per-iod	Nr per yr.	Hrs. ea per-iod	Nr per yr.	Hrs. ea per-iod	Nr per yr.	Hrs. ea per-iod	Nr per yr.
ARTEP Mission								
1. Movement to contact								
2. Hasty attack								
3. Deliberate attack								
4. Exploitation								
5. Night attack								
6. Defense								
7. Delay								
8. Disengage (under pressure)								
9. Defense of a built-up area								
10. Prepare a strong point								
11. Antiarmor ambush								
12. Passage of lines								
13. Crossing water obstacles (river crossing)								
14. Patrolling (reconnaissance and combat)								

VII

SOLDIER'S MANUAL TASKS

1. The purpose of this section of the questionnaire is to determine time/frequency of training for various Soldier's Manual tasks groupings for a unit to be fully combat ready. Included are most 10 level and some 20 level tasks for MOS 11B, C, D, E (19E/F) and 16P which are combat critical and/or resource (time/dollar) sensitive.
2. Specific tasks are not identified by MOS but rather are grouped by subject into logical instructional units, i.e. subjects that would normally be taught together. For each grouping, you are asked to enter in the space provided the hours per training period and the number of training periods per year you feel are necessary to be fully combat ready.
3. If you feel an item does not fit in the grouping shown, please indicate the time/frequency you feel necessary for that particular task.
4. Respondents need not validate SM tasks not pertinent to their type battalion.
5. In validating time and frequency disregard constraints that may be imposed by X, Y, Z type cycles.

	Hours per period	Periods per year
1. Driver Maintenance	_____	_____
Perform Before-, During-, and After- operation Checks and Services on a Vehicle.		
Maintain Basic Issue Items (B11).		
Maintain Operator's Items in Equip- ment Logbook.		
2. 81-MM MORTAR GUNNER, ASSISTANT GUNNER, AMMUNITION BEARER (CARRIER MOUNTED) DUTIES	_____	_____
Place carrier mounted 81-mm mortar into action.		
Boresight 81-mm mortar.		
Perform safety checks on 81-mm mortar.		
Lay mortar for deflection and elevation.		
Prepare 81-mm mortar ammunition for firing.		
Maintain 81-mm mortar and associ- ated fire control equipment.		
Remove a misfire from the 81-mm mortar.		
Refer sight and realign aiming posts.		
Reciprocally lay mortar using M2 aiming circle and place out aiming posts.		
Manipulate mortar for traversing and searching fires.		
Dismount mortar and place in action ground mounted.		

	Hours per period	Periods per year
3. 107-MM (4.2-in) MORTAR GUNNER, ASSISTANT GUNNER, AMMUNITION BEARER (CARRIER MOUNTED) DUTIES		
Place carrier mounted 107-mm (4.2 in) mortar into action. Boresight 107-mm (4.2-in) mortar. Perform safety checks on 107-mm (4.2-in) mortar. Lay mortar for deflection and elevation. Prepare 107-mm (4.2-in) mortar ammunition for firing. Maintain 107-mm (4.2-in) mortar and equipment. Remove a misfire from the 107-mm (4.2-in) mortar. Refer sight and realign aiming posts. Reciprocally lay mortar using M2 aiming circle and place out aiming posts. Manipulate mortar for traversing fires. Dismount mortar and place in action ground mounted.		
4. NBC Training (Individual)		
Maintain protective mask and accessories. Put on a protective mask. Take cover as protection against NBC hazards. Decontaminate self and individual equipment. Administer antidote to a nerve agent casualty. Measure radiation using radiac instruments.		
5. NBC Training (Track or Wheel Vehicle)		
Prepare a track or wheel vehicle for nuclear attack. Maintain gas particulate unit of a track vehicle.		

	Hours per period	Periods per year
6. NBC Training (Tank)	_____	_____
Prepare a tank for nuclear attack.		
Maintain gas particulate unit of a tank.		
7. Individual Movement Skills		
Move as a member of a fire team.		
Move under direct fire.		
React to indirect fire.		
React to flares.		
Move over, through, or around obstacles.		
8. Individual Movement Skills (Mortar)	_____	_____
Move as a member of a dismounted mortar squad (81-mm mortar)		
9. Vehicle Positioning	_____	_____
Select Temporary Vehicular Battlefield Position.		
10. Vehicle Movement	_____	_____
Conceal Movement by Route Selection.		
11. M16 Rifle	_____	_____
Maintain an M16A1 rifle, magazines, and ammunition.		
Load and unload an M16A1 rifle magazine.		
Load, reduce a stoppage, unload, and clear an M16A1 rifle.		
12. Claymore	_____	_____
Install/recover an electrically armed Claymore.		

	Hour per period	Periods per year
13. AP/AT Mines	_____	_____
Emplace and recover antipersonnel and antitank mines.		
Identify Minefield Markers.		
Assemble a non-electric detonation system .		
14. 90-MM RCLR	_____	_____
Maintain 90-mm RCLR.		
Boresight the 90-mm CLR.		
Load, reduce a stoppage, un- load, and clear 90-mm RCLR.		
15. Dragon	_____	_____
Maintain Dragon system.		
Perform preoperational checks on Dragon tactical system.		
16. Redeye Maintenance Checks	_____	_____
Perform preventive maintenance checks and services on (preoperation inspection of) Redeye.		
17. M60 Machinegun	_____	_____
Maintain an M60 machinegun and ammunition.		
Mount and dismount an M60 machinegun on a pedestal mount.		
18. Caliber .50 Machinegun	_____	_____
Maintain a caliber .50 machinegun and ammunition.		
Load, reduce a stoppage, unload, and clear a caliber .50 machinegun.		
Set headspace and timing on a caliber .50 machinegun.		
Mount and dismount a caliber .50 HBM2 Flex Machinegun on a tracked vehicle.		

	Hour per period	Periods per year
19. .45 Caliber Pistol	_____	_____
Maintain a caliber .45 pistol and ammunition. Load, reduce a stoppage, unload, and clear a caliber .45 pistol.		
20. M113A1 Operator Training		
Start and Stop an M113A1 Vehicle Engine. Operate an M113A1 Vehicle. Prepare an M113A1 Vehicle for Towing.		
21. 1/4 - Ton Vehicle Training	_____	_____
Operate a 1/4 Series Vehicle.		
22. M3A1 Submachinegun	_____	_____
Load and Clear the M3A1 Submachinegun. Maintain an M3A1 Submachine- gun.		
23. Auxiliary Generator, Tracked Vehicle	_____	_____
Maintain auxiliary generator on M577 tracked vehicle. Install/operate auxiliary genera- tor on M577 tracked vehicle.		
24. TOW	_____	_____
Maintain TOW weapons system. Load, correct malfunctions, un- load, clear TOW. Make a TOW launcher self-test and preoperational inspection.		
25. Night Vision Sight	_____	_____
Maintain AN/PVS-2 (Night Vision Sight). Conduct surveillance using an AN/PVS-2.		

	Hours per period	Period per year
26. 106-MM RCLR	_____	_____
Maintain caliber .50 spotting rifle, M8C.		
Load, reduce a stoppage, unload, and clear the caliber .50 spotting rifle, M8C.		
Maintain the 106-mm RCLR.		
Load, reduce a stoppage, unload, clear 106-mm RCLR.		
Conduct 106-mm RCLR weapon system alignment.		
27. M16 Plotting Board	_____	_____
Prepare M16 plotting board for operation and determine ini- tial firing data for mortars (pivot point).		
Process subsequent FO correc- tions using M16 plotting board (pivot point).		
28. LOADER DUTIES	_____	_____
Boresight a Tank-Mounted Searchlight.		
Perform Loader Prepare-to-Fire Checks.		
Load a 105-mm Main Gun.		
Perform Loader's Misfire Procedures for 105-mm Main Gun.		
Perform After-Firing Checks and Services on a 105-mm Main Gun.		
Unpack Ammunition.		
Maintain Ammunition.		
Stow Ammunition.		

	Hours per period	Periods per year
29. DRIVER DUTIES	_____	_____
Perform Before-, During-, and After-Operation Maintenance Checks and Services on an M60-Series Tank.		
Maintain Operator's Items in Equipment Logbook.		
Perform Driver Prepare-to-Fire Checks.		
Start and Stop a Tank Engine.		
Operate a Tank.		
Recover a Tank by Self-Recovery Means.		
Prepare a Tank for Towing.		
Participate in Mounted and Dis- mounted Tactical Movement.		
Maintain Basic Issue Items (B11).		
30. M60A2 Specific	_____	_____
Load the Main Gun Round/ Missile on M60A2 Tank.		
Apply Misfire Procedures for an M60A2 Main Gun Failure to Fire.		
Perform After-Firing Checks and Services on M60A2 Tank.		
Perform Before-, During-, and After- Operation Checks and Services on M60A2 Tank.		
Perform Driver Prepare-to-Fire Checks, Conventional/Missile, on M60A2 Tank.		
Perform Loader's Prepare-to-Fire Checks on M60A2 Tank.		

	Hours per period	Periods per year
31. M60A1 Specific	_____	_____
Use misfire procedures for a 105-mm main gun.		
Perform prepare-to-fire checks.		
Use battlesight.		
Adjust fire using burst on target.		
Use precision fire.		
Adjust fire from a subsequent fire command.		
32. Casualty Removal	_____	_____
Evacuate a wounded man from a tank.		
33. Tank External Phone	_____	_____
Place and External Phone into Operation.		
Perform Crew Maintenance on a Tank External Phone.		

	Hours per period	Periods per year
34. Camouflage/Concealment, preparation of position		
Camouflage/conceal self and individual equipment.		
Camouflage/conceal equipment.		
Camouflage/conceal defensive positions.		
Select temporary battlefield positions.		
Construct individual defensive positions.		
Clear fields of fire.		
Construct a Crew-Served Weapons Positions.		
Prepare and use aiming and firing stakes for the M16A1 rifle.		
Prepare and use aiming and firing stakes for the M16A1 rifle.		
Prepare and use aiming and firing stakes for the M203 grenade launcher.		
Prepare a range card for a TOW.		
Construct TOW position.		
Prepare a range card for a 106-mm RCLR.		
Construct 106-mm RCLR position (mounted).		
Construct 106-mm RCLR position (dismounted).		
Prepare range card for 90-mm RCLR.		
Engage targets with 90-mm RCLR.		
Prepare range card for Dragon.		
Prepare MAW position.		
Occupy Redeye position.		
Use aiming and firing stakes for the M60 machinegun.		
Construct M60 machinegun position.		
Prepare a range card for an M60 machinegun.		

	Hours per period	Periods per year
35. Radio Procedures	_____	_____
Establish and enter or leave a radio net.		
Apply anti-jamming procedures.		
36. OP Operation	_____	_____
Operate an Observation Post.		
37. Intelligence/Security	_____	_____
Use challenge and password.		
Process known or suspected enemy personnel.		
Collect/report information - SALUTE.		
Prepare a Spot Report.		
Process Captured Documents and Material.		
38. Communications Equipment	_____	_____
Perform Operator Maintenance on Tactical FM Radio Sets and Acces- sories.		
Install Radio Remote Control Equipment.		
Perform Operator Maintenance on Field Telephone TA-1/PT.		
39. Coax Machinegun	_____	_____
Load and Clear a Coaxial Machinegun.		
Maintain a Coaxial Machinegun.		
Apply Immediate Action to a Coaxial Machinegun.		
Boresight a Coaxial Machinegun.		
40. Surveillance	_____	_____
Conduct day and night surveil- lance without the aid of electronic devices.		

	Hours per period	Periods per year
41. Ground Navigation	_____	_____
Orient a map using a compass.		
Orient a map to the ground by map-terrain association.		
Determine a location on the ground.		
Navigate from one position on the ground to another.		
Determine distance while moving between 2 points on the ground.		
Determine a magnetic azimuth be- tween two known points on the ground.		
42. Redeye	_____	_____
Determine aircraft category for Redeye ranging.		
Engage hostile aircraft with Redeye (MTS).		
Destroy Redeye.		
Perform immediate actions on Redeye.		
43. Visual Communications	_____	_____
Communicate Using Visual Sig- nal Techniques.		
44. Fire Safety	_____	_____
Extinguish a fire in a Tank.		
45. Enemy Mines	_____	_____
Locate Mines with a Mine Detector.		
Remove Mines with a Grapnel or Rope.		
Detect enemy mines.		
46. Fire Support	_____	_____
Call for Supporting Fires.		
Adjust Supporting Fire.		

	Hours per period	Periods per year
47. First Aid	_____	_____
Apply the four life-saving measures (clear the air-passages, stop the bleeding, treat for shock, protect the wound).		
Apply first-aid measures for burns.		
Remove a victim from an electrical source and apply first-aid for electrical shock.		
Apply artificial resuscitation to a chemical-agent casualty.		
Apply preventive and first-aid measures for carbon monoxide poisoning.		
Practice proper personal hygiene procedures.		
Apply preventive measures to reduce climatic injuries.		
Administer artificial respiration (mouth-to-mouth).		
48. Hostile Aircraft	_____	_____
Engage hostile aircraft with individual weapon.		
49. Enemy Vulnerabilities	_____	_____
Recognize vulnerabilities of enemy armor to individual (M16A1 and M203) and crew-served (M60) weapons.		
50. Aircraft Identification	_____	_____
Identify Combat Aircraft		
51. Security	_____	_____
Resist enemy interrogation, indoctrination, and exploitation if you are captured.		
Safeguard classified information.		

	Hours per period	Periods per year
52. CEOI	_____	_____
<p>Use a Communications-Electronics Operating Instructions (CEOI) extract determine call signs, frequencies, and item number identifiers.</p> <p>Authenticate transmissions and encrypt/decrypt numbers and grid zone letters using the Kal 61 with KTC 1400 numerical code.</p> <p>Encode and decode messages using a tactical operations code, KTC-600.</p>		
53. Vehicle Training - 1/4 ton	_____	_____
<p>Self-recover a 1/4-ton Series Vehicle.</p> <p>Ford a Water Obstacle with a 1/4-ton Series Vehicle.</p>		
54. Vehicle Training - M113A1	_____	_____
<p>Self-recover a High-Centered M113A1 Vehicle.</p> <p>Operate an M113A1 Vehicle in water.</p> <p>Extinguish a fire in a Track Vehicle.</p>		
55. Map Reading	_____	_____
<p>Identify terrain features (natural and manmade) on the map.</p> <p>Determine the grid coordinates of a point on a military map using the military grid reference system.</p> <p>Determine the elevation of a point on the ground using a map.</p> <p>Measure a ground distance on a map.</p> <p>Convert a magnetic azimuth to a grid azimuth (or a grid azimuth to a magnetic azimuth).</p> <p>Determine a grid azimuth between two given points on a map.</p> <p>Estimate range.</p>		

	Hours per period	Periods per year
56. FORWARD OBSERVER PROCEDURES	_____	_____
Call for/adjust indirect fire (using grid coordinate method of target location and bracketing method adjustment).		
Call for/adjust indirect fire using the creeping method of adjust- ment.		
57. Range Firing - Mortar - Mounted		
Engage target using fire without FDC. (81MM MORTAR-MOUNTED and 4.2 MORTAR- MOUNTED)		
58. Firing - Claymore	_____	_____
Fire a Claymore mine.		
59. Night Firing - M16A1	_____	_____
Mount/dismount AN/PVS-2 on an M16A1 rifle.		
Zero AN/PVS-2 when mounted on an M16A1 rifle.		
Engage a target with a rifle using AN/PVS-2.		
60. Day Firing - M16A1	_____	_____
Zero an M16A1 rifle.		
Engage targets with an M16A1 rifle.		
61. Firing - LAW	_____	_____
Prepare an M72A2 LAW for firing; restore M72A2 LAW to carrying configu- ration.		
Engage targets with an M72A2 LAW - apply immediate action to correct a malfunction on an M72A2 LAW.		

	Hours per period	Periods per year
62. Hand Grenades	_____	_____
Maintain hand grenades. Engage enemy targets with hand grenades.		
63. Firing - Grenade Launcher	_____	_____
Maintain an M203 grenade launcher and ammunition. Load, unload, and clear an M203 grenade launcher. Zero an M203 grenade launcher. Engage targets with an M203 grenade launcher and apply immediate action to reduce stoppage.		
64. Night Firing - M60		
Mount/dismount an AN/PVS-2 (Starlight scope) on an M60 machinegun. Zero an AN/PVS-2 (Starlight scope) to an M60 Machinegun. Zero an M60 machinegun.		
65. Demolition Training	_____	_____
Emplace a Demolition Charge.		
66. Firing - .45 caliber pistol	_____	_____
Engage targets with a caliber .45 pistol.		
67. Firing - Caliber .50 machinegun	_____	_____
Engage targets with a caliber .50 machinegun. Target/confirm targeting on a caliber .50 machinegun.		

	Hours per period	Periods per year
68. Night Firing - Caliber .50 machine- gun.	_____	_____
Mount/dismount AN/TVS-2 sight on caliber .50 machinegun.		
Boresight AN/TVS-2 to caliber .50 machinegun. Engage a target with a Cal .50 Machinegun Using AN/TVS-2 Night Ovservation Device (NOD).		
69. Firing - Mortar - Dismounted	_____	_____
Engage target using fire without FDC. (81 MM MORTAR/ and 4.2 MORTAR DISMOUNTED).		
70. Firing - TOW	_____	_____
Engage targets with TOW		
71. Firing - 106-mm RCLR.	_____	_____
Engage targets with the 106-mm RCLR.		
72. Firing - Dragon	_____	_____
Engage targets and perform misfire procedrues with the Dragon.		
73. Firing - M3A1 Submachinegun	_____	_____
Engage Targets and Apply Immediate Action to an M3A1 Sub- machinegun.		

(Blank)

VIII

ADDITIONAL CONDITIONS

1. It is reasonable to assume that less experienced trainers will be able to get less overlap training benefit from a given period of instruction than more experienced trainers. As an example, an E-6 squad leader can be expected to do a better job of improving his squads's ability to prepare defensive positions while participating in a company level defense problem than an E-5 squad leader because he, the E-6, is a more experienced leader and trainer. On a percentage basis, how much less effective is the leader/trainer who is one grade below the grade authorized by TO&E? _____%

2. The time required to refresh or regain proficiency (training time) is influenced by the length of time since the task in question was last performed. If the desired interval between training is one month and two months have elapsed since the last time the task was performed, the time required to regain proficiency will increase by what percentage? _____%

3. For different weapons systems there are different numbers of personnel changes within the crew which can be accepted before it is necessary to conduct training to rebuild the team.

a. Among crew members (not leaders/vehicle commanders) how many personnel changes can occur before crew retraining is required: (example: can you lose a loader on a tank and not have to retrain the crew immediately to maintain fully combat ready (95%) status?

Tank _____

TOW _____

RIFLE SQUAD _____

MORTAR _____

RIFLE PLATOON _____

b. Must retraining be conducted to maintain a fully combat ready (95%) proficiency if the crew leader changes?

	YES	YES- UN LESS CREW IS HIGHLY TRAINED	NO
Tank:	_____	_____	_____
Mortar:	_____	_____	_____
Rifle Squad:	_____	_____	_____
Rifle Platoon:	_____	_____	_____

4. It probably takes longer to learn a skill for the first time than it does to recover proficiency on a skill which was mastered at some time in the past. (Time to train vs time to retrain). Is time to train .05X, 1X, 1.5X, 2X longer (or any number) than time to retrain? _____ Enter your response.

5. In a unit where some, but not all of the personnel have never previously mastered the task, how would you schedule training for that task? Circle letter for best solution - Choose only one.

a. Two separate periods of formal training-one for initial training and one for retraining.

b. One formal period oriented to those who need retraining with self-paced/off duty instructions for the initial learners.

c. One formal period oriented to those who need initial training--with those who need retraining being released for other activity early.

d. One formal period oriented toward those who need initial training - all members attend and participate in the entire training period.

e. Two formal training periods: Period one oriented to and attended by initial learners only. Period two oriented toward all members and attended by the entire unit.

6. Assume that you have defined the training program required to maintain fully combat ready proficiency in Soldier's Manual tasks and ARTEP missions. You find that resource constraints and other requirements will not permit you to conduct the full program. Rank order the following candidates for reducing the scope of the program. A rating of 1 indicates the first area of decrement, 5 is the last and least acceptable course of action.

- _____ a. Reduce repetitions of SM tasks.
- _____ b. Eliminate less critical SM tasks.
- _____ c. Reduce repetitions of all ARTEP missions evenly.
- _____ d. Reduce repetitions of ARTEP missions with the reductions being applied from less critical tasks to more critical tasks.
- _____ e. Eliminate less critical ARTEP missions completely.

7. If the majority of your unit E1-E4 were mental category IV, i.e., AFQT score of 30 or below by what percentage would you have to increase the frequency of training to maintain a fully combat ready proficiency level over the frequency required if the majority of the unit E1-E4 were mental category III or higher?

_____ 8

8. Under the same conditions by what percentage should you increase the time to train the average task or mission?

_____ 8

(Blank)

IX

GUNNERY PROGRAMS

How frequently a year should the line fire gunnery training programs be conducted by the type units indicated to achieve the various levels of proficiency.

Type Unit	Level or Proficiency		
	Fully Combat Ready (95%)	Combat Ready (85%)	Marginally Combat Ready (70%)
Tank Co			
Antitank Platoon			
81mm Mortar Platoon			
107mm Mortar Platoon			
Scout Platoon			
REDEYE Platoon			

(Blank)

ANNEX 2

MAGNITUDE ESTIMATION-SCALING

The Magnitude Estimation Scaling Procedure*

Subjective, qualitative judgments can be summarized in many ways. The typical polling procedure simply requires some form of a yes-no response to an issue. The results are presented in terms of the percent of a group that agrees or disagrees with an issue. When the percentage is high a consensus is indicated and an intensity of feeling is implied, but in reality the actual degree of the intensity is unknown.

It is also common to have items ranked in order of some quality such as attractiveness, goodness, importance, and so on. An average rank of an item can then be shown as well as the rank order correlation among different sets. But the size of the intervals between ranks and the intensity of the feeling expressed are unknown.

A refinement of these polling/rating procedures is to provide the respondent with a spectrum of response categories that represents a range from "never" to "always", or some other set of descriptors. The number of intermediate categories between the extremes (e.g., "never" and "always") varies, commonly runs from five to seven, but may be larger. The intent usually is to provide a series of equally spaced response categories.

There are two major shortcomings to such a procedure. First, the usual treatment of the ensuing data implicitly assumes equal intervals when

* Taken from "Agricultural Aviation User Requirement Priorities," The Actuarial Research Corporation, Falls Church, Virginia, NASA Report 144215.

in fact the categories simply have been assigned numbers from 1 to 5, or 1 to 7. In reality, however, the intervals are almost always unequal, and to an unknown degree, with respect to intensity, amount, or other quality. It is incorrect to conclude that the first category is half the amount of the second category or one-third of the third category, even though numbers have been assigned to each interval. There can be a further compounding due to the descriptors applied to the categories. Depending on the words chosen to define each category, the distribution of responses can be skewed one way or the other. Strictly speaking, it is improper to compute arithmetic means and similar statistics since the intervals are not equal. In practice, however, such calculations are rarely inhibited.

For several decades there has been an intensive effort to devise judgment scales that have the attribute of additivity. Thurstone and Chave's early study of attitudes toward the church (Ref. A1) and subsequent work on "equal appearing intervals" was an elegant approach to the phenomenon of proportionality that is inherent in human judgments, wherein the variability of judgments is approximately proportional to the magnitude of the stimulus (or reference object, or item).

The method of paired comparisons used to establish these intervals is a tedious procedure for the rater when a large number of items is involved. For example, with forty items, 780 comparisons are required. The work of Stevens (Ref. A2) and others reflected a direct approach to the problem of establishing scale intervals by requiring the subject to estimate ratios of magnitudes with respect to a reference point.

Until quite recently this procedure of magnitude estimation has been applied mainly to psychophysical phenomena. Gradually a body of studies has accumulated in which the relationship between judgments of non-physical events and objective indices of these events has been examined, e.g., the preference for watches, odors, occupations; the importance of monarchs; the degree of frustration and aggression in a military setting; and the seriousness of delinquents' crimes (Refs. A3, A4, A5, A6, A7, and A8). A decade ago it was noted that the magnitude estimation scaling that was used in psychophysics showed a remarkable consistency in these other applications and it was suggested that herein was a means to create a metric, i.e., a scale that had the characteristic of additivity (A9). The first major application of magnitude estimation to the scaling of qualitative events occurred in the study of crimes (Ref. A8) noted above. Shortly thereafter applications were made to the assessment of the seriousness of insurgents' activities in Southeast Asia (Refs. A10, A11) and the determination of how much credibility was placed on intelligence reports that had been previously graded according to source reliability and content truthfulness (Ref. A12).

The procedure in Magnitude Estimation is simple in concept. Each item in a list is compared to a single reference item which is initially assigned any non-zero positive number. If the item being appraised is judged to have more or less of a given quality than the reference item, this is noted by assigning a value that shows the magnitude of the judgment in terms of multiples or fractions of the value assigned to the

reference number. For example, if the reference item has been given a value of fifteen (15) and the compared item is judged to be three times more worthwhile (or serious, or desirable, or inhibitory, or whatever the characteristic at issue may be) a value of 45 is noted. If it is judged to be only half as worthwhile, a value of $15/2$ or 7.5 is entered. Any multiple or fractional value is permitted except zeros (since geometric means are calculated using logarithms and zeros cannot be handled) or negative numbers (since degrees of "absence of a quality" makes little sense).

In theory, the reference item can be assigned any value or each respondent can assign his own value prior to making the judgments (Ref. A8). Based on past applications of the procedure, the instructions are more easily followed when a value of ten (10) is provided for each reference number. Unless there is a specific reason to use a single reference item (such as a known or conventional standard) each item is randomly used as a reference among the judges. To compensate for position, or order effects on the compared items, each respondent is given a different, randomly ordered list of items.

It has been traditional to prepare test booklets that present only one item on a page and to instruct each subject not to refer back to scores assigned to prior items. The cost of preparing such booklets is quite high and various alternative procedures have been tried to reduce the costs of printing and assembling the booklets. Computer-generated and printed booklets with random orders and multiple items per page have been used with little loss of fidelity. Some subjects have reported difficulty

in handling fractional values where the reference item was considered to have the highest value. A practical compromise is to provide a minimum of 3 or 4 item orders and a designation of 4-8 reference items which can be expected to fall within the extreme weights. This designation requires preliminary information from a pre-test of similar or, better, identical items.

The use of booklets with one item per page to decrease the likelihood of referring back to earlier judgments is practical only when the test group is small enough so that the test administrator can adequately monitor the procedures. In the case of mailed responses, the experimenter will not know if any backreferencing has taken place and it is thus more expedient to display the items in a continuous list.

The subjects should be instructed about the context (the setting, the conditions, or the scenario) in which the judgments are to be made. In effect, this establishes a frame of reference for the respondent.

The Magnitude Estimation Scaling Procedure (MAG ES) has several distinct advantages. The technique allows each respondent to make judgments without a restriction on the range of values applied to each item. The scores are expressions of the magnitude of the relative quality or intensity at issue. In addition the resulting weights (geometric means) are additive, a characteristic that provides the opportunity to relate highly dissimilar items (the classic "apple" and "orange" dilemma) quantitatively in terms of magnitude so that they can be compared on a common scale.

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MAGNITUDE-ESTIMATION SCALING,
A BRIEF DESCRIPTION*

I. PROBLEM

Decision-makers in all walks of life are continually called upon to provide direction and guidance relative to programs or activities for which there is no precedence or rational substantiation. By virtue of the attendant unknowns, quantitative assessments of all salient factors is all but impossible.

The decision-maker's ultimate resolution in these circumstances, therefore, is largely a product of experience and a qualitative, highly subjective assessment on the part of the supporting staff as well as the executive. Unfortunately, such processes are prone either to inaccurate interpretation of existing facts or to the inadvertent introduction of personal bias. While subjectivity and disciplined intuition can produce positive results, the lack of inherent structure in the reasoning process can lead all too often to inappropriate conclusions resulting in the selection of less than desirable courses of action.

An alternative evaluation procedure often utilized in the absence of quantified analysis is the convening of a panel of experts or recognized authorities on the subject. Although a useful device for identifying problem areas as well as some possible solutions thereto, the ensuing

* Presented to the 44th National Meeting of the Operations Research Society of America, San Diego, Calif., 1973, by Robert L. Kaplan.

discussions frequently degenerate into unproductive, costly, and time-consuming debate. Further, such debates can be influenced significantly by dominant personalities who may be inaccurate or strongly biased in their assessments. The net results, therefore, are seldom satisfactory and any agreements relative to solutions normally can only be achieved with considerable acrimony or by hopeless resignation by all participants.

Another factor normally inhibiting quantitative assessment is the usual nonhomogenous or dissimilar nature of the factors involved. Although people tend to combine "apples" and "oranges" by some form of mental or numerical exercise, the derived results usually violate mathematical law. The net results, therefore, are unable to withstand rigorous examination and, hence, cannot be justified logically.

Manifestations of these problems have long been acknowledged. Staffs, analysts, and executives have recognized the requirement for a more objective, orderly means of obtaining reliable, defensible measurements for those subjects defying direct quantification. Although a number of techniques and approaches have been used or are being used, most prove unsatisfactory and unreliable in general usage, the reason being the lack of fundamental mathematical logic in the methodology.

II. MAGNITUDE-ESTIMATION SCALING

A. General Description

A unique methodology, Magnitude-Estimation Scaling (MAGES), offers an effective, logical solution to the aforementioned difficulties

associated with such widely diverse problems as establishing priorities, allocating research resources, assessing program benefits, or measuring social impact.

MAGES is a technique whereby a large number of recognized authorities (that is, personnel well versed in the particular subject under examination) are solicited to reflect their individual perceptions as to the relative importance of various key factors pertaining to the subject. A specially devised and administered questionnaire is used to record the perceptions. The responses are then mathematically aggregated by geometric means to provide:

1. An overall rank-ordering of elements, and
2. A series of weighting factors indicative of the relative emphasis to be assigned to each rank-ordered item.

The technique is extremely flexible insofar as subjects for application are concerned. With respect to environmental research, for example, MAGES could be used to:

1. Establish the relative degrees of "seriousness" for various major problem areas or within a given problem area, sub-elements thereof, e.g., Major area: Environmental impact; sub-elements -- noise, air pollution, land use, erosion, sociological effects.
2. Identify regional or local problem areas and evaluate the severity of conditions using results obtained above.

3. Establish the relative degrees of "Importance" of competing remedial measures.
4. Assign weighting factors to evaluation criteria to be used in cost-effectiveness models, simulations, etc., for determining the effectivity of these remedial measures and programs.

It should be noted that MAGES should only be used in those instances where standard quantitative measures (such as may be derived from physical or scientific laws) are unavailable.

B. Characteristics

One fundamental characteristic differentiates MAGES from most other similar quantification techniques. MAGES is based upon a defensible mathematical principle -- the ratio scale. This feature provides the essential logic that permits the combination of highly dissimilar subjects on a common reference scale. The ratio scale provides the additive qualities that permit the addition and subtraction of weighting factors. The capability permits the combining of groups of subjects, for example, the evaluation of competing groups of "packaged" remedial programs.

It is the almost universal use of "Category" scaling by other group response methodologies such as the well-known "Delphi" method which separate them from the unique and more consistent MAGES approach.

Another characteristic of MAGES is the manner in which group response is combined. As mentioned earlier, the individual responses are

computed using the geometric mean. This technique provides tremendous damping power, the n^{th} root rather than the arithmetic mean $\frac{x}{n}$, n being the number of respondents. Extreme responses from the overly biased or possibly aberrant respondent, although included in the computation, are thusly tempered. Furthermore, since the responses are written, polemics and lengthy unproductive debate are avoided.

C. Respondents

The success of MAGES is to a large extent dependent upon the qualifications and unbiased selection of the respondents or experts. By unbiased selection we mean it is desirable that all sides of the argument be polled. Normally, selection is made after the subject matter has been described in terms of its salient issues. Recognized authorities well versed on the particular subject from academia, Government agencies, research institutions, private enterprise, and consulting firms would be identified and asked to participate. It is highly desirable that some degree of parity in the numbers of diverse respondents be achieved, however, to prevent inadvertent bias.

The number of respondents should never be less than 25, with at least 50 being highly desirable. Depending upon the complexity of the subject and questionnaire, each respondent should spend no more than 30 to 60 minutes completing his questionnaire.

The polling of experts may be conducted on an individual basis or at technical meetings, conventions, and similar gatherings. The latter has been found to be the most convenient and economical.

II. Questionnaire

The most critical element in the application of MAGES is the preparation of the questionnaire used in polling the experts. The questionnaire in effect is the synthesis of the problem being addressed and must be compiled with utmost attention to objectivity to preserve the mathematical logic of the methodology and prevent consistency.

The questionnaire is formed by conducting a comprehensive analysis of the problem under consideration. The objective is to establish the scope of the problem and its systems boundaries, as well as identify the salient factors and parameters. All relevant information and data, including opposing points of view are used as source material if necessary. The level of detail must correspond to the desired depth and focus of the stated problem.

Objectivity in the questionnaire is preserved by eliminating any item that would unduly bias the respondent. For example, in establishing the priorities for research programs, the estimated costs should be omitted. The format of the questionnaire itself reflects the "ratio" principle and the method of execution enhances objectivity of the response.

III. SUMMARY

MAGES offers a positive solution to a number of difficult problem areas such as the establishment of priorities for research programs. It has the ability to focus the most knowledgeable minds on a subject without

incurring the burden of unproductive debate. The output is mathematically defensible and relatively free from untenable extremes.

The basic methodology has evolved from psychological testing techniques and has been used in the past to describe the seriousness of urban crime (Ref. 1) and insurgency in Thailand (Refs. 2, 3, and 4). The technique also was used to establish a priority ranking and relative emphasis scale for proposed Criminal Justice Programs (Ref. 5). The results obtained in these experimental applications were highly convincing, defensible, and consistent.

We believe that the methodology is an extremely powerful analytic tool and that sufficient promise has been shown to warrant further research and more utilitarian applications

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APPENDIX B

GROUP COMPARISONS

I. INTRODUCTION

Five sub-groups of respondents are represented in the Qualified Pool. The sub-groups are composed of elements from:

- 3rd Armored Division - Europe
- 1st Mech. Infantry Division - CONUS
- U.S. Army War College
- U.S. Army Command and General Staff College
- U.S. Army Sergeant Majors Academy

Seldom do individuals, let alone groups, perceive issues in the same context or frame of reference. Varying background, experience levels, personal biases, etc., more often contribute to disparate viewpoints. Sometimes the positions taken are extreme, even aberrant. Other times very valid reasons for differing are offered.

While the Battalion Training Model (BTM) Survey does not address individual concerns, the perceptions of the sub-groups are of considerable interest. The ability to separate the different viewpoints can give insight into the consistency and/or the deficiencies of various aspects of training doctrine, objections and philosophy.

For this reason the sub-groups were examined separately in juxtaposition to identify salient differences in perception of training issues. This Appendix examines some of these comparisons.

II. COMPARISON OF THE RESPONDENT GROUP WEIGHTS

A. Correlations among the Group Weights

The rank order correlations of the weights for the collective tasks among the five respondent groups are generally high (see Table B-1), indicating little divergence in the ordering of the task weights from group to group. Table B-1 also shows the low correlations with item order, indicating that the randomization of the item presentation order had the desired effect. Since the Bn CO and AWC combined group would necessarily have spurious correlations with the 3rd and 4th Divisions and AWC, the values are not shown.^{1/}

The correlations based on the ARTEP missions are similar to those for the tasks except in the case of the SMA which was shown in Section IV of the main body to have given higher weights to the "offensive" missions compared to the other sub-groups.

B. Displays of the Group Weights

The task and mission percentage of weights assigned by the respondent groups are shown graphically in Figures B-1 through B-4^{2/}. In each presentation the results based on the Qualified Pool are shown as a point of reference. The rank order correlations noted above can be observed, along with the emphases the SMA placed on tasks 9 (Fire and Maneuver) 12 (Leader Tasks) and

^{1/} Biases are introduced when members of one sub-group are included in another, e.g., Bn COs.

^{2/} Relative Weights per se cannot be easily compared directly on the same scale when different items are used as normalizing points. For this reason the scores are converted to percentage weights.

TABLE
GROUP RANK ORDER CORRELATIONS OF WEIGHTS

Collective
Tasks

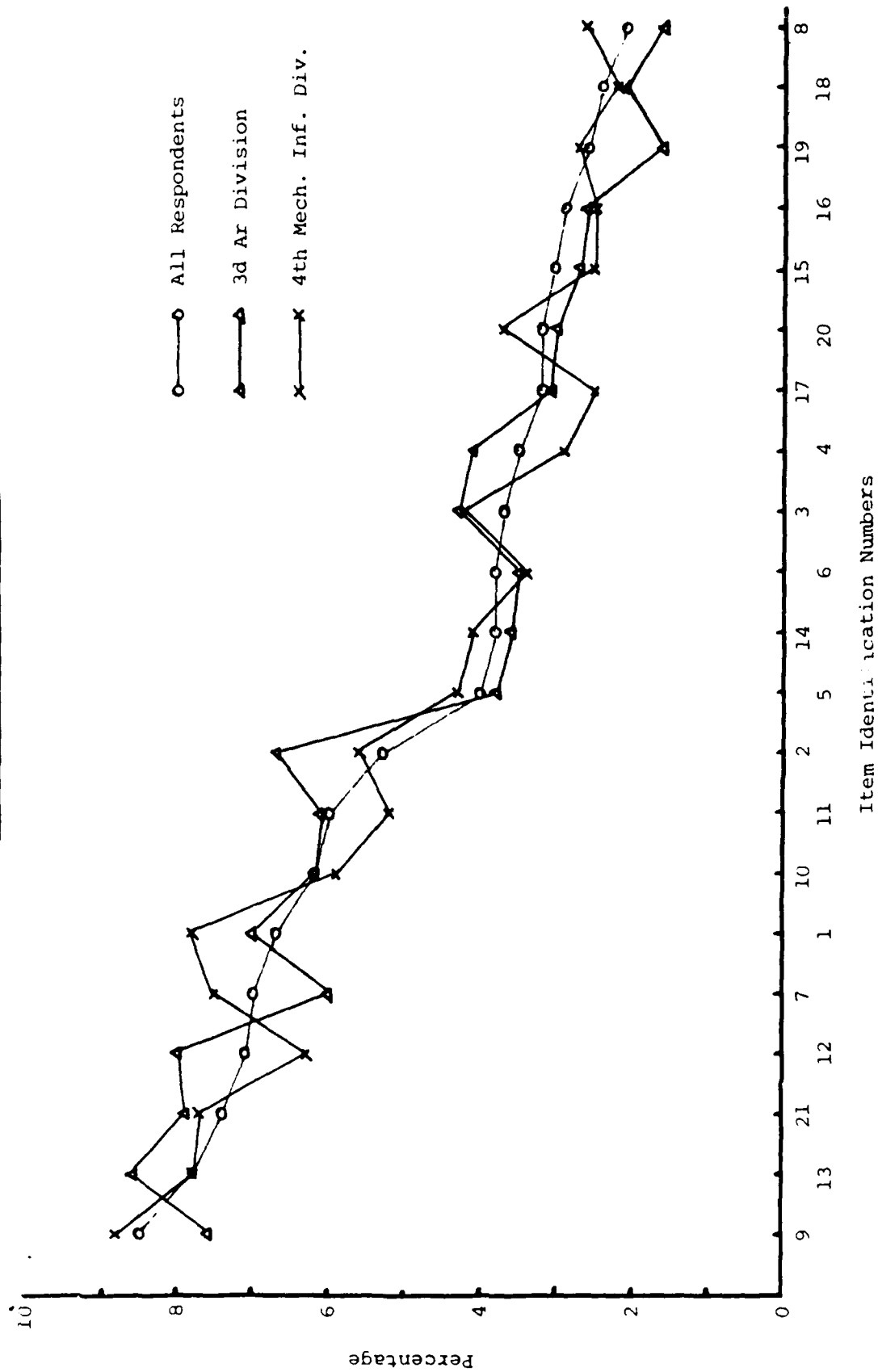
	4th	3rd	C&GS	SMA	AWC	Item Order	AWC & Bn COs
4th							
3rd	.91*						
C&GSC	.86*	.77*					
SMA	.72*	.80*	.73*				
AWC	.90*	.82*	.96*	.75*			
Item order	.34	.33	.14	.16	.15		
AWC + Bn COs	-	-	.91*	.72*	-	.24	

ARTEP
Missions

	4th	3rd	C&GS	SMA	AWC	Item Order	AWC & Bn COs
4th							
3rd	.94*						
C&GSC	.85*	.89*					
SMA	.66*	.53**	.43				
AWC	.89*	.82*	.75*	.62*			
Item order	-.16	.07	-.05	.30	-.09		
AWC + Bn COs	-	-	.84*	.60**	-	-.04	

* $p \leq .01$
** $p \leq .05$

Figure B-1
COLLECTIVE TASK RATINGS



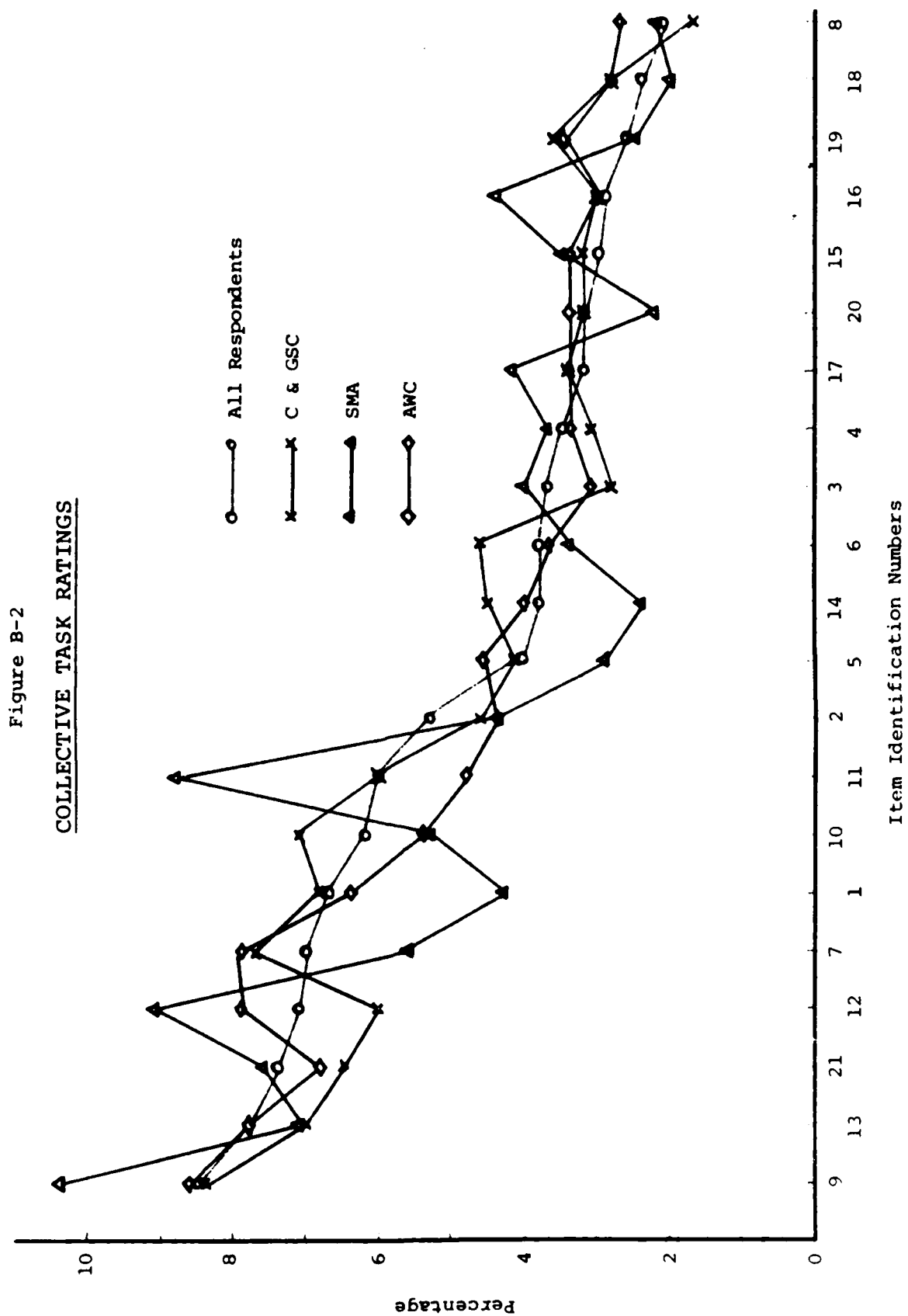


Figure B-3
ARTEP MISSIONS RATINGS

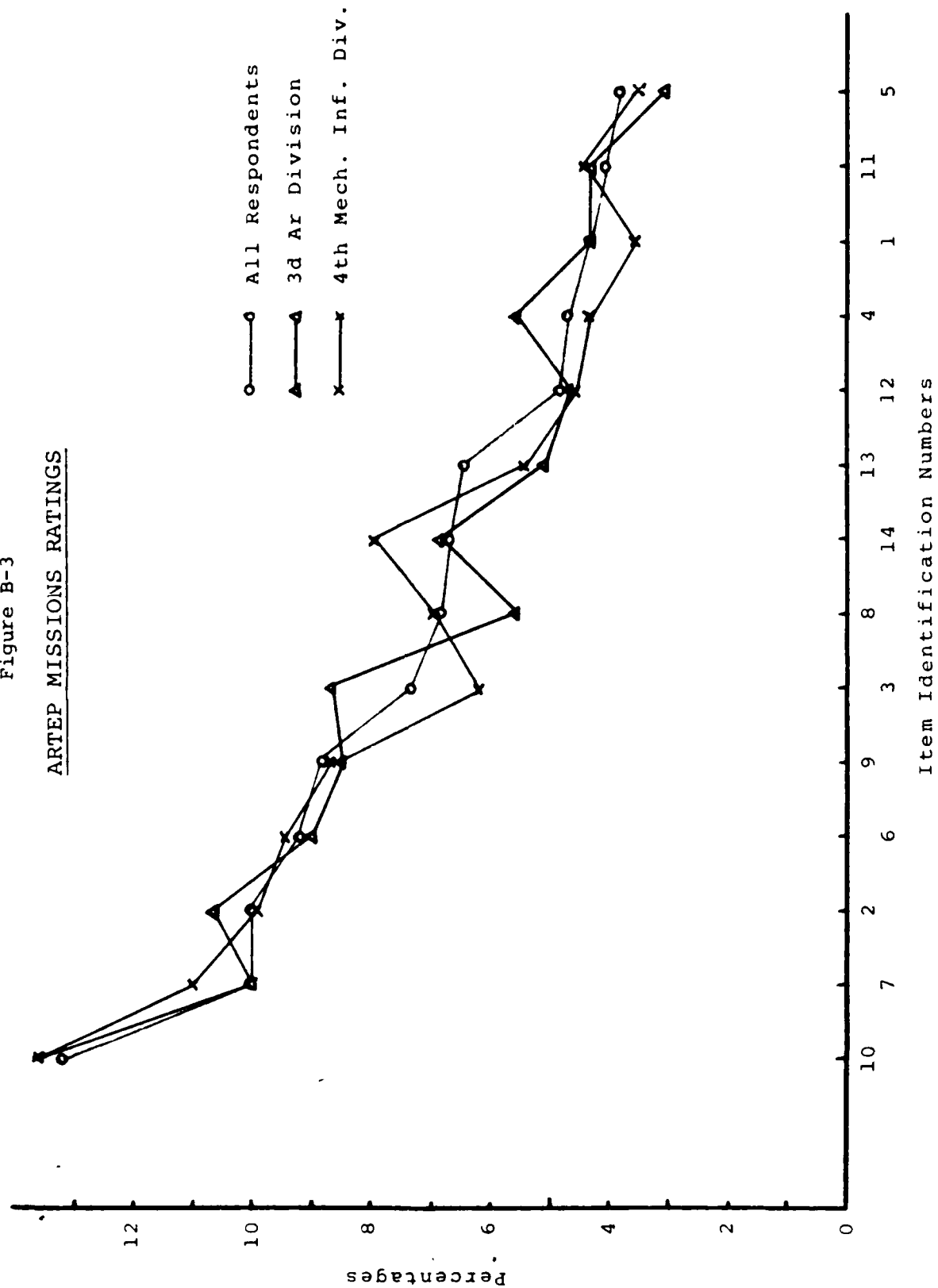
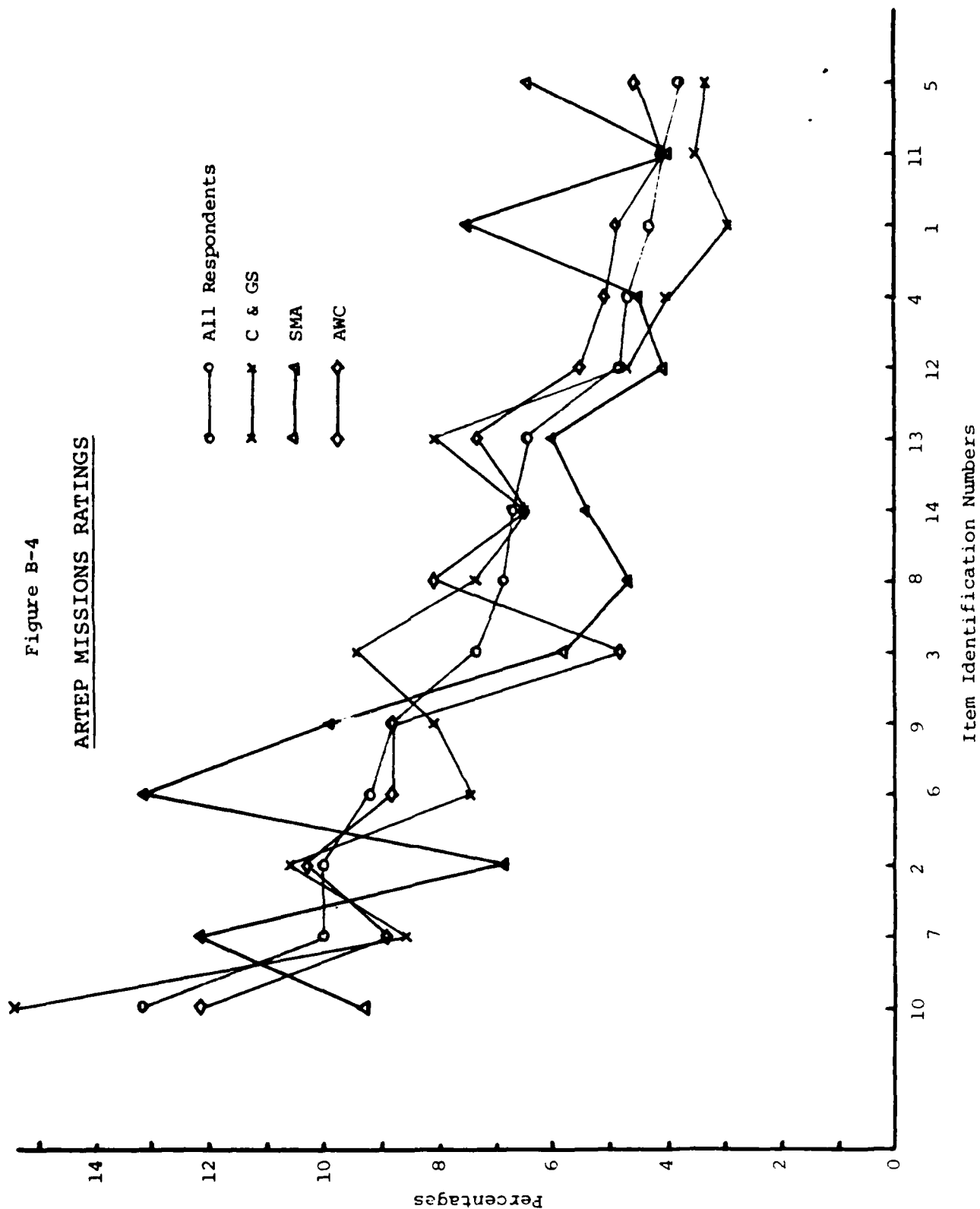


Figure B-4
ARTEP MISSIONS RATINGS



4 (Organic Mortar Use) and missions 10 (Defense), 2 (Delay), 6 (Deliberate Attack) and 1 (Exploitation).

C. Differences in Collective Task Weights in the 3rd and 4th Divisions

The weights given by field and company grade officers in the two divisions were compared. The few items on which the officer grade groups for the Europe and CONUS divisions differed on the mean log scores assigned are shown in Table B-2. Interpretation of the results is left to qualified military operations and training personnel.

The 3rd and 4th Division weights given by personnel in different assignments were compared. The mean log scores that varied significantly are shown in Table B-3. It is clear that the Bn COs, Co COs and Cbt. Spt. Co. COs are not in disagreement on the criticality of the collective tasks. The Bn COs differ only on Item 17, with the Europe respondents giving a high weight to the use of special techniques for operating in a hostile TAC air environment. The Europe Co. COs give more weight to security and intelligence operations (Item 15) and the Cbt Spt Co. COs give less weight to the use of organic and small arms (Item 19) than their CONUS counterparts.

The S-3 and S-3 Staff respondents in Europe assigned greater criticality to six tasks that are directly related to

TABLE B-2

COMPARISON OF COLLECTIVE TASK WEIGHTS BY GRADE LEVEL
IN CONUS AND EUROPE DIVISIONS*

Collective Task	4th Div. Field <u>v</u> Company	3rd Div. Field <u>v</u> Company	Field Grade 4th <u>v</u> 3rd	Company Grade 4th <u>v</u> 3rd
4				<
15				<
17			<	
18	<			
20		<		

* Entries show mean log differences beyond 5% level of confidence for the t's. The open end of the symbol indicates group with the higher mean.

TABLE B-3

COMPARISON* OF COLLECTIVE TASK WEIGHTS BY ASSIGNMENT
IN CONUS AND EUROPE DIVISIONS

Collective Task	Bn CO 4th v 3rd	S-3 4th v 3rd	Co. CO 4th v 3rd	Cht Spt Co CO 4th v 3rd
2		<		
4		<		
9		<		
10		<		
13		<		
15			<	
17	<			
19				<
20		<		

* All entries show mean log differences beyond 5% level of confidence for the t's. The open end of the symbol indicates group with the higher mean.

active fighting: Cover and Concealment (Item 2), Use of Organic Mortars (Item 4), Fire and Maneuver (Item 9), Preparation of Battle Positions (Item 10), Use of Fighting Vehicles (Item 13) and Employing Non-Organic Combat Support Assets (Item 20).

III. COMPARISONS OF TRAINING TIMES AND FREQUENCIES

Three separate groupings of the respondents were examined with respect to possible differences in the training times and frequencies that were assigned to the collective tasks, ARTEP missions and Soldier's Manual tasks.

A. Europe v CONUS

The Europe group was augmented with seven respondents from AWC who used the "European assumptions" when completing the time and frequency sets. The significant differences, based on t-tests, are shown in Table B-4. For these items, the Europe estimates reflect a lower frequency in training periods required and for the ARTEP missions and Soldier's Manual tasks, a higher number of hours per training period.

B. Armor v Mech. Infantry in the 3rd and 4th Divisions

The Armor and Infantry respondents in the 4th Division with respect to required training times and frequencies report only three items where differences occurred. (See Table B-5.) Similarly, the 3rd Division Armor v Infantry responses are shown in Table B-5. In this last instance, the Armor respondents show a shorter training period requirement for three missions and five Soldier's Manual tasks.

TABLE B-4

SIGNIFICANT DIFFERENCES* FOR TRAINING HOURS AND FREQUENCY
EUROPE v CONUS

Collective Task	Bn Level Hours Freq.	Co Level Hours Freq.	Plt Level Hours Freq.	Sqd Level Hours Freq.
1	<		<	
2				<
11			<	
13			<	
15			<	
18		<		
19				<
ARTEP Mission				
1		<		
4	<			> <
7		<		
10				>
12			<	
13			>	
14			>	
Soldier Manual Task				
4		<		
6	>			
9		<		
10		<		
19		<		
23	>			
26		>		
29	>			
34		<		
38		<		
39	>			
43	>			
47		<		
51	>			
52		<		
53	>			
55	>	<		
57	>			
59		<		
60	>			
61		<		
64		<		
66		<		
67		<		

* p = .05

> EUROPE is higher

< USA is higher

TABLE B-5
SIGNIFICANT DIFFERENCES* FOR TRAINING HOURS AND FREQUENCY
ARMOR v MECH. INFANTRY

Sub-Group	Basis of Comparison	Bn Level Hours Freq.	Co Level Hours Freq.	Plt Level Hours Freq.	Sqd Level Hours Freq.
CONUS	Collective Task				
	10				<
	17				>
	Soldiers' Manual Task				
	13	<			
EUROPE	Collective Task				
	9				<
	10				<
	ARTEP Mission				
	2				<
	4				<
	6		<	<	<
	Soldiers' Manual Task				
	4	<			
	6	<			
	13	<			
	36	<	<		
	37	<	<		

* $p \leq .05$

> Armor is higher

< Mech. Infantry is higher

C. SMA v All Others

Among the Soldier's Manual Tasks wherein the SMA differed from all other respondents, fifteen of the items concerned weapon firing. In each case the SMA required more hours and fewer periods. (See Table B-6.)

TABLE B-6

SIGNIFICANT DIFFERENCES* FOR SOLDIERS' MANUAL TASKS
TRAINING HOURS AND FREQUENCY

SMA v ALL OTHERS

Soldiers' Manual Task	Hours	Freq.
10		<
14		<
50	<	
57	>	
58	>	
59	>	
60	>	<
61		<
62	>	
63		<
64	>	<
66	>	
67		<
68	>	
69	>	
73	>	

* $p = .05$

> SMA is higher

< ALL OTHERS is higher

IV. COMPARISON OF ARMOR AND INFANTRY RESPONDENTS' REQUIREMENTS FOR MAINTENANCE

A comparison of the responses of the Armor Branch and Infantry Branch with respect to maintenance issues is displayed in Table B-7. The Armor Branch respondents report more time is required for maintenance of weapons, equipment, and vehicles than do the Infantry Branch respondents. Essentially there is no significant difference in the hours of maintenance training required.

TABLE B-7. MAINTENANCE ACTIVITIES

Hours per Week Required,

Armor vs. Infantry

Maintenance Activity	Mean Time (hours per week)		t-Value	2-Tail Probability
	Armor	Infantry		
Maintenance of weapons, equipment, and vehicles	14.9405	11.2740	5.02	.000
Maintenance training	3.4667	3.0606	1.52	.129

BATTALION TRAINING SURVEY

Volume II

FINAL REPORT

BATTALION TRAINING MODEL SURVEY

VOLUME II

Prepared for the

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U.S. Army Training and Doctrine Command
Ft. Belvoir, Virginia

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VOLUME II
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USERS' GUIDE TO

TABLES OF REQUIRED TRAINING HOURS AND FREQUENCIES

The tables in this volume show the mean training hours and frequencies required to achieve different levels of combat proficiency. The .95 confidence interval is indicated by the HIGH and LOW entries in the tables.

The tables are arranged as follows:

Table I - Collective Tasks (pages 3 to 29)

Table II - ARTEP Missions (pages 30 to 43)

Table III - Soldier's Manual Tasks (pages 45 to 128)

Each table consists of seven parts (A-G) corresponding to the different sets of factors (assumptions) used. A summary of these factors and the pages on which the tables can be found are as follows:

Table Part	Combat Proficiency to Be Achieved	Factors Applied			Page Number for Table:		
		Not Present for Training	Trainer Grade Substitution	Change in Duty Position	I	II	III
A	95%	25%	15%	35%	3	30	45
B	95%	15%	15%	35%	7	32	57
C	95%	60%	15%	35%	11	34	69
D	95%	25%	15%	20%	15	36	81
E	95%	25%	15%	10%	19	38	93
F	95%	25%	25%	35%	23	40	105
G	95%	25%	40%	35%	27	42	117

Following Table III, a descriptive summary of the Soldier's Manual Tasks is included showing the specific details of the tasks and their classification according to the Battle Drills defined by the ARTS group. (See pages 129 to 142.)

The base condition (represented in Tables IA, IIA, and IIIA) is a composite of the EUROPE and CONUS assumptions that were provided to the respondents when they completed the surveys. Of the 176 persons in the Qualified Pool, 56 used the EUROPE assumptions (49 from the 3rd Division and 7 Army War College students who had just completed a European tour). The CONUS assumptions were reduced to reflect the proportion of respondents who used the EUROPE assumptions. As a practical matter, the final specifications of the assumptions for the base condition were rounded to the nearest 5%, as shown above. The rationale for the change in locale assumptions is discussed in Volume I.

TABLE 1A. SET IV COLLECTIVE TASKS--TIME AND FREQUENCIES

95 PER CENT PROFICIENCY
25 PER CENT NOT PRESENT FOR TRAINING
15 PER CENT TRAINER GRADE SUBSTITUTION
35 PER CENT CHANGE IN DUTY POSITION

FACTORS APPLIED--

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL	
	MEAN	LOW	HIGH	FREQ	PROD	HRS	FREQ	PROD	MEAN	LOW	HIGH	FREQ	PROD	HRS	FREQ	PROD	HOURS	
01 TACTICAL MOVEMENT	MEAN	6.0	4.0	35.2	7.2	6.0	43.2	6.7	7.0	46.9	5.6	7.0	39.2	164.5				
	LOW	7.5	3.0	22.5	6.1	5.0	33.5	5.7	6.0	34.2	4.7	7.0	32.9	120.1				
	HIGH	10.1	4.0	43.4	8.2	6.0	44.7	7.7	8.0	61.6	6.4	8.0	51.2	202.6				
	N	124	136	131	131	131	131	131	131	131	131	131	131	131	131	131	131	
02 SECURITY AND INTELLIGENCE OPS	MEAN	5.3	3.0	15.9	5.1	4.0	23.4	4.5	4.0	18.0	3.4	5.0	17.3	71.3				
	LOW	4.6	3.0	13.8	4.5	3.0	13.5	4.0	4.0	16.0	3.0	5.0	15.3	58.3				
	HIGH	6.1	3.0	19.3	5.7	4.0	22.9	5.1	5.0	25.5	3.8	6.0	22.8	89.4				
	N	120	114	134	134	134	134	134	134	134	134	134	134	134	134	134	134	
03 COVER-UNCOVER-RE-ENTRY	MEAN	4.6	4.0	26.4	5.0	5.0	30.3	5.0	6.0	34.0	4.0	8.0	36.4	129.6				
	LOW	5.4	3.0	16.2	5.3	5.0	25.3	5.0	7.0	30.3	4.2	7.0	29.6	104.6				
	HIGH	7.7	4.0	36.8	6.9	6.0	41.4	6.7	7.0	46.9	5.4	9.0	48.6	167.7				
	N	114	123	132	132	132	132	132	132	132	132	132	132	132	132	132	132	
04 USE NON-DEADLY COMBAT SUPPORT	MEAN	4.1	5.0	43.5	6.4	5.0	32.3	4.4	5.0	22.0	3.5	5.0	17.5	112.0				
	LOW	5.9	4.0	27.6	5.3	5.0	26.5	3.7	4.0	14.8	2.8	4.0	11.2	89.1				
	HIGH	9.4	5.0	47.0	7.4	6.0	44.4	5.1	6.0	30.6	4.3	6.0	25.8	147.8				
	N	129	143	141	141	141	141	141	141	141	141	141	141	141	141	141	141	
05 EMPLOY ORGANIC SMALL ARMS	MEAN	5.8	3.0	17.4	5.7	4.0	21.2	5.5	5.0	27.5	5.7	7.0	39.9	106.0				
	LOW	6.8	3.0	14.4	4.7	4.0	18.9	5.0	5.0	25.3	5.0	6.0	30.3	88.2				
	HIGH	6.8	4.0	27.2	5.8	5.0	29.3	6.0	6.0	36.0	6.3	8.0	50.4	142.6				
	N	76	77	127	127	127	127	134	137	137	139	139	139	139	139	139	139	
06 EMPLOY AIRCRAFT VEHICLES	MEAN	4.9	4.0	35.6	6.5	6.0	21.3	7.4	8.0	59.2	5.9	8.0	47.2	193.0				
	LOW	7.5	4.0	30.0	7.4	5.0	17.3	6.4	7.0	44.8	5.2	7.0	36.4	148.2				
	HIGH	10.4	5.0	52.0	9.7	6.0	38.2	8.4	8.0	67.2	6.7	9.0	63.3	237.7				
	N	101	127	131	131	131	131	137	134	134	134	134	134	134	134	134	134	
07 EMPLOY ORGANIC ARTILLERY WEAPONS	MEAN	4.0	4.0	37.0	7.1	6.0	31.3	6.9	7.0	48.3	5.4	9.0	53.1	177.2				
	LOW	4.6	4.0	25.4	6.7	5.0	31.5	6.0	6.0	36.0	5.1	7.0	35.7	129.6				
	HIGH	9.3	5.0	48.6	9.2	7.0	37.4	7.8	7.0	54.6	6.7	10.0	67.0	225.5				
	N	114	131	131	131	131	131	136	134	134	134	134	134	134	134	134	134	
08 EMPLOY ORGANIC ARTILLERY WEAPONS	MEAN	4.6	4.0	30.4	6.4	5.0	24.2	5.5	6.0	33.3	4.9	7.0	34.3	131.7				
	LOW	4.3	4.0	27.2	5.8	4.0	21.7	4.8	5.0	28.3	4.2	6.0	25.2	97.6				
	HIGH	5.8	4.0	39.0	7.4	5.0	33.3	6.1	7.0	42.7	5.5	9.0	49.5	166.4				
	N	124	124	124	124	124	124	117	117	117	99	99	99	99	99	99	99	

YEAR	TOTAL	PLANT										HOURS
		1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	
1954	203.2	7.4	8.0	62.4	62.4	62.4	7.4	8.0	62.4	62.4	62.4	203.2
1955	155.1	6.5	7.0	44.3	44.3	44.3	6.5	7.0	44.3	44.3	44.3	155.1
1956	256.9	8.5	9.0	76.3	76.3	76.3	8.5	9.0	76.3	76.3	76.3	256.9
1957	118.3	1.1	1.2	34.2	34.2	34.2	1.1	1.2	34.2	34.2	34.2	118.3
1958	92.9	1.0	1.0	30.0	30.0	30.0	1.0	1.0	30.0	30.0	30.0	92.9
1959	144.8	1.5	1.5	44.5	44.5	44.5	1.5	1.5	44.5	44.5	44.5	144.8
1960	100.0	1.0	1.0	27.0	27.0	27.0	1.0	1.0	27.0	27.0	27.0	100.0
1961	192.4	1.0	1.0	53.0	53.0	53.0	1.0	1.0	53.0	53.0	53.0	192.4
1962	163.6	1.0	1.0	47.0	47.0	47.0	1.0	1.0	47.0	47.0	47.0	163.6
1963	239.3	1.0	1.0	63.0	63.0	63.0	1.0	1.0	63.0	63.0	63.0	239.3
1964	92.8	1.0	1.0	24.0	24.0	24.0	1.0	1.0	24.0	24.0	24.0	92.8
1965	74.9	1.0	1.0	21.0	21.0	21.0	1.0	1.0	21.0	21.0	21.0	74.9
1966	113.7	1.0	1.0	31.5	31.5	31.5	1.0	1.0	31.5	31.5	31.5	113.7
1967	88.3	1.0	1.0	24.5	24.5	24.5	1.0	1.0	24.5	24.5	24.5	88.3
1968	65.0	1.0	1.0	18.0	18.0	18.0	1.0	1.0	18.0	18.0	18.0	65.0
1969	101.7	1.0	1.0	23.0	23.0	23.0	1.0	1.0	23.0	23.0	23.0	101.7
1970	66.4	1.0	1.0	15.0	15.0	15.0	1.0	1.0	15.0	15.0	15.0	66.4
1971	50.5	1.0	1.0	13.0	13.0	13.0	1.0	1.0	13.0	13.0	13.0	50.5
1972	83.6	1.0	1.0	21.0	21.0	21.0	1.0	1.0	21.0	21.0	21.0	83.6
1973	115.6	1.0	1.0	27.0	27.0	27.0	1.0	1.0	27.0	27.0	27.0	115.6
1974	90.5	1.0	1.0	21.0	21.0	21.0	1.0	1.0	21.0	21.0	21.0	90.5
1975	144.5	1.0	1.0	31.0	31.0	31.0	1.0	1.0	31.0	31.0	31.0	144.5

Question

	INITIALION				COMPANY			PLATOON			SQUAD			YEAR TOTAL
	HRS	FRQ	PROD	MRS	FRQ	PROD	MRS	FRQ	PROD	MRS	FRQ	PROD	MRS	
017 MATTER POLITICS	MEAN	9.6	4	30.0	4.5	5	47.5	6	44.3	7.3	6	43.9	6	175.3
	LOW	7.6	3	22.6	3.1	4	31.2	6	42.6	6.4	5	32.4	5	138.6
	HIGH	12.3	4	41.2	13.8	5	54.1	7	62.3	9.3	7	58.1	7	215.6
	N	129	127		130	122		135	135	133	134			
019 DEFENSE MINISTRATION	MEAN	8.5	3	11.5	4.7	4	15.8	4	15.6	3.7	4	14.8	4	60.7
	LOW	4.9	3	12.4	3.7	3	11.1	4	14.0	3.4	4	13.6	4	50.7
	HIGH	5.1	3	15.1	4.6	4	18.4	5	21.0	4.1	4	16.4	4	71.1
	N	108	103		130	121		133	126	134	126			
011 EMERGENCY COMBAT	MEAN	3.3	5	40.5	7.9	6	47.4	4.7	23.5	3.7	5	18.5	5	135.9
	LOW	2.4	5	33.5	5.6	5	35.3	3.8	19.3	2.8	4	11.2	4	102.7
	HIGH	11.0	6	60.6	12.5	7	54.4	5.6	31.6	4.5	6	27.0	6	189.8
	N	118	143		125	134		117	122	91	91			
13 LEAFLET/COMPANION	MEAN	8.6	7	63.2	8.9	8	71.2	8.8	79.2	7.4	9	66.6	9	277.2
	LOW	7.2	6	48.2	7.5	7	52.3	7.4	59.2	6.1	8	48.8	8	203.7
	HIGH	4.3	7	61.3	10.4	9	93.6	10.3	92.7	8.7	10	87.0	10	342.6
	N	106	126		113	127		118	123	115	113			
TOTAL SUM OF PERCENT	MEAN		593.2			711.3			721.2			669.1		2691.8
	LOW		440.8			516.3			577.4			511.6		2066.7
	HIGH		743.1			893.5			907.6			857.1		3385.3

[illegible]

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HOURS	
Q17 BATTLE POSITIONS	MEAN	9.0	3.	27.0	9.5	4.	34.3	8.0	4.	32.3	7.3	4.	29.2	4.	29.2	126.2	
	LOW	7.6	2.	15.2	8.7	3.	24.3	7.1	4.	28.4	6.4	4.	25.6	4.	25.6	94.1	
	HIGH	10.3	3.	34.9	10.8	4.	41.2	8.9	5.	44.5	8.3	5.	41.5	5.	41.5	160.1	
	N	124	127		135	122		135	135		133	134					
Q18 WEACH MINIFIELDS AND ORBITALS	MEAN	4.5	2.	9.0	4.2	3.	12.6	3.9	3.	11.7	3.7	3.	11.1	3.	11.1	44.4	
	LOW	4.0	2.	9.0	3.7	2.	7.4	3.5	3.	10.5	3.4	3.	10.2	3.	10.2	36.1	
	HIGH	5.1	2.	17.2	4.6	3.	14.9	4.2	4.	16.8	4.1	3.	12.3	3.	12.3	53.1	
	N	108	109		130	121		133	126		134	126					
Q19 EMPLOY COMBAT SERVICE SUPPORT	MEAN	9.3	4.	37.2	7.9	4.	31.6	4.7	4.	18.8	3.7	4.	14.8	4.	14.8	102.4	
	LOW	7.9	4.	31.6	6.6	4.	25.4	3.8	4.	15.2	2.8	3.	8.4	3.	8.4	81.6	
	HIGH	12.8	4.	43.2	9.2	5.	46.9	5.6	4.	22.4	4.5	4.	18.3	4.	18.3	129.6	
	N	110	143		125	133		117	122		91	91					
Q20 LEADER/COMMEN/IR SKILLS	MEAN	8.6	5.	43.0	4.9	6.	53.4	8.8	6.	52.8	7.4	6.	44.4	6.	44.4	193.6	
	LOW	7.2	4.	28.8	7.5	5.	37.5	7.4	6.	44.4	6.1	6.	36.6	6.	36.6	147.3	
	HIGH	9.9	5.	49.5	13.4	6.	62.4	10.3	6.	61.8	8.7	7.	60.3	7.	60.3	234.6	
	N	100	126		113	127		110	123		115	113					
TOTAL SUM OF PRODUCTS	MEAN			447.4			516.5			518.9			483.7			1958.9	
	LOW			311.5			404.2			417.6			371.1			1506.4	
	HIGH			549.5			629.7			645.1			603.0			2426.3	

TABLE IC. SET IV COLLECTIVE TASKS--TIME AND EFFICIENCIES

FACTORS APPLIED-		95 PER CENT PROFICIENCY 90 PER CENT NOT PRESENT FOR TRAINING 15 PER CENT TRAINED GARY SUBSTITUTION 15 PER CENT CHANG. IN DUTY POSITION												
QUESTION	BATTALION	COMPANY	PLATOON	SQUAD	YEAR TOTAL									
	HRS	FEED	PROG	HRS	FEED	PROG	HRS	FEED	PROG	HRS	FEED	PROG	HOURS	
01 TACTICAL MOVEMENTS	MEAN	4.4	10.	80.0	7.2	15.	100.0	6.7	18.	120.0	5.6	19.	100.0	17.4
	LOW	2.5	A.	60.0	6.1	13.	70.3	5.7	15.	85.0	4.7	18.	94.6	303.4
	HIGH	10.1	10.	101.0	9.2	15.	123.0	7.7	21.	161.7	6.4	21.	134.4	520.1
	N	123	134	131	131	134	134	134	134	134	134	134	134	
02 SECURITY AND INTELLIGENCE OPNS	MEAN	5.3	A.	42.4	5.1	10.	51.0	4.5	10.	45.0	3.4	13.	44.2	182.6
	LOW	4.6	A.	36.4	4.5	8.	36.0	4.0	10.	40.0	3.0	13.	39.3	151.4
	HIGH	6.1	A.	48.4	5.7	12.	57.0	5.1	13.	66.0	3.8	15.	57.0	223.1
	N	123	114	130	130	127	134	134	122	122	123	124	124	
03 COVER-CONCEALMENT	MEAN	6.6	10.	66.0	6.0	13.	78.0	5.8	15.	87.0	4.8	21.	111.9	231.8
	LOW	5.4	A.	43.0	5.0	13.	55.0	5.0	15.	75.0	4.2	14.	75.6	253.8
	HIGH	7.7	10.	77.0	6.9	15.	103.5	6.7	18.	120.0	5.6	23.	124.2	425.3
	N	114	124	130	130	137	134	134	132	132	136	134	134	
04 USE NON-ORGANIC COMBAT SUPPORT	MEAN	9.1	13.	105.3	6.4	13.	83.2	4.4	13.	57.2	3.5	13.	45.5	291.2
	LOW	7.3	10.	59.0	5.3	13.	68.9	3.7	10.	37.0	2.3	10.	24.0	273.9
	HIGH	9.9	13.	122.2	7.6	15.	111.0	5.1	15.	76.5	4.3	15.	64.5	374.2
	N	123	143	130	130	141	134	134	119	119	134	134	134	
05 EMPLOY ORGANIC SHALL ARMS	MEAN	5.4	A.	46.4	5.3	11.	53.0	5.5	13.	71.5	5.7	19.	102.6	273.5
	LOW	4.8	A.	38.4	4.7	13.	47.0	5.0	13.	65.0	5.0	15.	75.0	225.4
	HIGH	6.9	10.	68.0	5.8	13.	75.4	6.2	15.	91.0	6.3	21.	132.3	365.7
	N	75	77	128	128	123	134	134	132	132	134	135	135	
06 EMPLOY FIGHTING VEHICLES	MEAN	8.9	11.	89.0	8.5	13.	127.5	7.4	21.	155.4	5.9	21.	121.9	495.9
	LOW	7.5	11.	75.0	7.4	13.	76.2	6.4	18.	115.0	5.2	18.	93.7	340.0
	HIGH	10.4	13.	135.2	9.7	15.	145.5	9.4	21.	176.0	6.7	23.	154.2	511.2
	N	101	122	127	127	134	134	137	134	134	128	134	134	
07 EMPLOY ORGANIC ANTI-TANK WEAPONS	MEAN	8.9	11.	89.0	8.5	13.	127.5	7.4	21.	155.4	5.9	21.	121.9	495.9
	LOW	7.5	11.	75.0	7.4	13.	76.2	6.4	18.	115.0	5.2	18.	93.7	340.0
	HIGH	9.3	13.	120.9	9.2	15.	147.6	7.4	19.	140.0	6.7	23.	176.0	541.1
	N	111	135	127	127	134	134	136	126	126	124	123	123	
08 EMPLOY ORGANIC MORTARS	MEAN	7.0	10.	76.0	6.9	13.	88.4	5.5	15.	82.0	4.3	19.	84.2	330.1
	LOW	6.3	10.	63.0	5.9	13.	58.0	4.4	13.	52.0	3.2	15.	63.0	246.4
	HIGH	8.3	10.	88.0	7.4	13.	101.4	7.1	19.	119.4	5.5	23.	126.1	425.7
	N	123	125	123	123	114	114	117	123	123	123	123	123	

95 PER CENT PROFICIENCY
90 PER CENT NOT PRESENT FOR TRAINING
15 PER CENT TRAINED G-ENTRY SUBSTITUTION
35 PER CENT CHANGE IN DUTY POSITION

FACTORS APPLIED--

QUESTION	BATTALION			COMPANY			PLATOON			SQUAD			TEAM TOTAL
	WPS	FAFO	PRCP	MPS	FRCP	PRCP	MPS	FRCP	PRCP	MPS	FRCP	PRCP	
009 FIRE AND MANEUVER	MEAN	A.4	10.	8.5	15.	12.0	7.8	21.	203.8	7.4	21.	155.4	4800.5
	LOW	7.1	A.	56.8	6.3	13.	6.3	18.	24.0	6.3	18.	113.4	523.2
	HIGH	9.5	10.	96.0	9.1	14.	165.8	23.	24.0	8.5	23.	195.6	397.3
	N	106	110	127	133	134	134	132	132	131	131	131	657.4
010 RECONNAISSANCE	MEAN	6.9	1.	69.0	5.3	13.	5.7	15.	85.6	5.0	15.	75.0	294.4
	LOW	5.4	A.	47.2	4.7	10.	5.0	15.	75.0	4.4	15.	66.0	235.2
	HIGH	8.5	10.	86.0	5.9	13.	6.4	18.	115.0	5.5	18.	99.0	377.9
	N	117	110	126	135	136	131	136	136	127	131	131	
011 REORGANIZE- CONSOLIDATE	MEAN	4.7	10.	47.0	4.5	13.	4.1	13.	53.3	3.1	15.	46.5	205.3
	LOW	4.1	A.	32.8	4.0	13.	3.6	13.	46.8	2.7	13.	35.1	166.7
	HIGH	5.2	10.	52.0	5.1	15.	4.6	15.	64.0	3.5	15.	52.5	251.0
	N	123	134	134	134	142	134	134	134	114	125	125	
012 NIGHT OPERATIONS	MEAN	8.3	15.	89.0	8.2	18.	7.7	18.	138.6	6.5	19.	117.7	492.2
	LOW	7.4	10.	79.0	7.3	15.	5.9	18.	109.5	5.8	18.	104.4	415.3
	HIGH	10.0	13.	130.0	9.1	14.	8.6	21.	180.0	7.1	21.	149.1	623.5
	N	133	131	138	138	140	137	127	127	136	125	125	
013 WAC OPERATIONS	MEAN	4.5	A.	35.2	4.5	15.	4.1	15.	51.5	4.0	18.	72.0	236.2
	LOW	3.3	A.	31.2	4.0	13.	3.6	15.	54.0	3.6	15.	54.0	192.0
	HIGH	5.0	10.	50.0	5.0	15.	4.6	18.	82.3	4.5	18.	81.0	293.8
	N	134	134	140	140	144	143	133	133	142	138	138	
014 COMPANY IN GUILT-UP AREAS	MEAN	5.1	A.	40.8	5.5	13.	5.3	13.	58.7	4.3	13.	51.7	225.4
	LOW	4.5	5.	22.5	4.4	10.	4.7	10.	47.0	4.4	10.	44.0	162.5
	HIGH	5.7	A.	45.6	6.1	13.	5.3	13.	75.4	5.4	13.	73.2	272.5
	N	115	124	133	133	141	135	143	143	140	137	137	
015 HOSTILE TAC AIR ENVIRONMENT	MEAN	5.3	10.	50.0	4.1	10.	3.1	13.	40.0	2.9	13.	37.7	169.0
	LOW	4.2	A.	33.6	3.5	10.	2.7	13.	35.0	2.0	13.	26.0	124.7
	HIGH	5.7	10.	57.0	4.7	13.	3.5	15.	52.0	3.3	15.	42.9	213.5
	N	124	132	133	133	149	130	140	140	131	131	131	
016 COMMUNICATIONS IN FW ENVIRONMENT	MEAN	7.3	15.	90.0	5.7	15.	4.6	15.	59.0	3.7	13.	48.1	494.5
	LOW	6.2	10.	80.0	4.7	13.	4.0	13.	50.0	3.0	13.	40.0	235.3
	HIGH	8.5	15.	127.5	6.0	15.	5.0	18.	74.0	4.0	15.	63.0	361.5
	N	124	140	140	140	149	131	132	132	123	123	123	

QUESTION	BATTALION				COMPANY				COUPOD				YEAR TOTAL	
	HRS	FFCO	PROO	HFR	FFCO	PROO	HRS	FFCO	PROO	HRS	FFCO	PROO	HOURS	YEAR TOTAL
017 BATTLE POSITIONS	MEAN	9.0	10.	96.0	9.5	13.	123.5	8.0	15.	127.0	7.3	15.	109.5	443.0
	LOW	7.5	8.	60.8	9.3	11.	83.2	7.1	15.	106.8	6.4	13.	81.2	333.5
	HIGH	10.3	12.	103.0	10.8	13.	140.4	8.9	18.	160.2	8.3	18.	149.4	553.0
	N	126	127	130	130	122		135	135		133	134		
018 BREACH MINIFIELDS AND OBSTACLES	MEAN	4.5	8.	38.0	5.2	10.	42.0	3.9	10.	39.0	3.7	13.	37.0	154.0
	LOW	4.0	8.	32.0	3.7	8.	29.6	3.5	10.	35.0	3.4	10.	34.0	130.6
	HIGH	5.1	8.	40.8	4.6	10.	46.0	4.2	13.	54.8	4.1	10.	41.0	162.4
	N	104	109	130	130	121		133	126		134	126		
019 EMPLOY COMBAT SERVICE SUPPORT	MEAN	9.3	13.	120.9	7.9	15.	118.5	6.7	13.	61.1	3.7	13.	48.1	364.6
	LOW	7.9	13.	102.7	6.6	13.	85.8	3.8	13.	49.4	2.8	10.	28.0	265.9
	HIGH	10.9	15.	162.0	9.2	18.	165.6	5.6	15.	84.0	4.5	15.	67.5	479.1
	N	119	123	125	125	138		117	122		91	91		
020 LEADER/COMMANDER SKILLS	MEAN	8.6	18.	156.8	8.9	21.	188.9	8.4	23.	222.4	7.6	23.	175.2	716.3
	LOW	7.2	15.	108.0	7.5	18.	135.0	7.4	21.	155.4	6.1	21.	128.1	526.5
	HIGH	9.9	18.	178.2	10.4	23.	239.2	10.3	23.	236.9	8.7	26.	226.2	881.5
	N	106	126	113	113	127		118	123		115	113		
TOTAL SUM OF PRODUCTS	MEAN			1506.7			1810.5			1846.8			1721.9	6813.9
	LOW			1138.6			1374.8			1472.3			1308.4	5294.7
	HIGH			1883.2			2265.8			2331.0			2236.5	8553.5

TABLE ID. SFT IV COLLECTIVE TASKS--TIME AND FREQUENCIES

FACTORS APPLIED--

95 PER CENT PROFICIENCY

25 PER CENT NOT PRESENT FOR TRAINING

15 PER CENT TRAINER GRADE SURSITITION

24 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL	
	MRS	FREQ	PROD	MRS	FREQ	PROD	MRS	FREQ	PROD	MRS	FREQ	PROD	MRS	FREQ	PROD	MRS	FREQ	HOURS
Q1 TACTICAL MOVEMENTS	MEAN	8.8	3.	26.4	7.2	4.	24.9	6.7	5.	33.5	5.6	5.	26.0	5.	26.0	116.7	5.	116.7
	LOW	7.5	2.	15.0	6.1	4.	24.4	5.7	4.	22.8	4.7	5.	23.5	5.	23.5	65.7	5.	65.7
	HIGH	10.1	3.	33.3	8.2	4.	32.3	7.7	6.	46.2	6.4	6.	38.4	6.	38.4	147.7	6.	147.7
	N	129	114		131	142		138	136		130	126		126				
Q2 SECURITY AND INTELLIGENCE OPNS	MEAN	5.3	2.	13.6	5.1	3.	15.3	4.5	3.	13.5	3.4	4.	13.6	4.	13.6	53.0	4.	53.0
	LOW	4.6	2.	3.2	4.5	2.	9.0	4.0	3.	12.0	3.0	4.	12.3	4.	12.3	42.2	4.	42.2
	HIGH	6.1	2.	12.2	5.7	3.	17.1	5.1	4.	20.4	3.8	4.	15.2	4.	15.2	64.9	4.	64.9
	N	120	119		134	127		134	122		123	124		124				
Q3 COVER-CONCEALMENT	MEAN	6.6	3.	13.8	6.0	4.	24.0	5.8	4.	23.2	4.9	6.	28.9	6.	28.9	95.8	6.	95.8
	LOW	5.4	2.	10.8	5.0	4.	23.0	5.0	4.	20.0	4.2	5.	21.3	5.	21.3	71.8	5.	71.8
	HIGH	7.7	3.	23.1	6.9	4.	27.6	6.7	5.	33.5	5.4	6.	32.4	6.	32.4	116.6	6.	116.6
	N	114	128		130	137		138	132		136	134		134				
Q4 USE NON-ORGANIC COMBAT SUPPORT	MEAN	8.1	4.	32.4	6.4	4.	25.6	4.4	4.	17.6	3.5	4.	14.0	4.	14.0	89.6	4.	89.6
	LOW	6.9	3.	23.7	5.3	4.	21.2	3.7	3.	11.1	2.8	3.	8.4	3.	8.4	61.4	3.	61.4
	HIGH	9.4	4.	37.6	7.4	4.	29.6	5.1	4.	20.4	4.3	4.	17.2	4.	17.2	104.8	4.	104.8
	N	129	143		130	141		114	119		85	88		88				
Q5 EMPLOY ORGANIC SMALL ARMS	MEAN	5.8	2.	11.6	5.3	3.	15.9	5.5	4.	22.0	5.7	5.	26.5	5.	26.5	78.8	5.	78.8
	LOW	4.8	2.	9.6	4.7	3.	14.1	5.0	4.	20.0	5.0	4.	20.0	4.	20.0	63.7	4.	63.7
	HIGH	6.8	3.	21.4	5.8	4.	23.2	6.0	4.	24.0	6.3	6.	37.4	6.	37.4	105.4	6.	105.4
	N	76	77		126	123		134	132		133	135		135				
Q6 EMPLOY FIGHTING VEHICLES	MEAN	8.9	3.	26.7	8.5	4.	34.0	7.4	6.	44.4	5.9	6.	35.4	6.	35.4	140.5	6.	140.5
	LOW	7.5	3.	22.5	7.4	4.	29.5	6.4	5.	32.0	5.2	5.	26.3	5.	26.3	113.1	5.	113.1
	HIGH	10.4	4.	41.6	9.7	4.	38.4	8.4	6.	50.4	6.7	6.	40.2	6.	40.2	171.0	6.	171.0
	N	101	122		127	134		137	134		128	134		134				
Q7 EMPLOY ORGANIC ANTITANK WEAPONS	MEAN	8.0	3.	24.0	7.3	4.	29.2	6.9	5.	34.5	5.9	6.	35.4	6.	35.4	123.1	6.	123.1
	LOW	6.6	3.	19.8	6.3	4.	25.2	6.3	4.	23.0	5.1	5.	25.5	5.	25.5	96.5	5.	96.5
	HIGH	9.3	4.	37.2	9.2	5.	41.1	7.8	5.	39.1	6.7	7.	46.3	7.	46.3	164.1	7.	164.1
	N	119	135		130	134		136	126		124	123		123				
Q8 EMPLOY ORGANIC HOSTERS	MEAN	7.6	3.	22.8	6.4	4.	27.2	5.5	4.	22.0	4.9	5.	24.5	5.	24.5	96.5	5.	96.5
	LOW	6.3	3.	18.9	5.4	3.	17.4	4.8	4.	19.2	4.2	4.	16.3	4.	16.3	72.3	4.	72.3
	HIGH	8.8	3.	26.4	7.8	4.	31.2	6.1	5.	30.5	5.5	6.	33.0	6.	33.0	121.1	6.	121.1
	N	124	124		129	113		117	117		99	94		94				

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROB	HRS	FREQ	PROB	HRS	FREQ	PROB	HRS	FREQ	PROB	HRS	FREQ	PROB	HRS	
09 FIRE AND MANEUVER	MEAN	6.4	3.	25.2	4.0	4.	12.7	7.8	6.	46.8	7.4	6.	44.4	148.4			
	LOW	7.1	2.	14.2	6.9	4.	27.6	6.9	5.	36.5	6.3	5.	31.5	107.8			
	HIGH	4.6	3.	28.8	9.1	5.	45.5	8.7	6.	52.2	8.5	6.	51.0	177.5			
	N	106	116		127	133		134	132		131	120					
010 RECONNAISSANCE	MEAN	6.9	3.	23.7	5.3	4.	21.2	5.7	4.	22.8	5.0	4.	20.0	86.7			
	LOW	5.9	2.	11.8	4.7	3.	14.1	5.0	4.	20.0	4.4	4.	17.6	63.5			
	HIGH	8.0	3.	24.0	5.9	4.	23.5	6.4	5.	32.3	5.5	5.	27.5	107.1			
	N	117	113		126	135		133	136		127	130					
011 REORGANIZE- CONSOLIDATE	MEAN	4.7	3.	14.1	4.5	4.	14.3	4.1	4.	16.4	3.1	4.	12.4	60.9			
	LOW	4.1	2.	9.2	4.0	4.	16.1	3.6	4.	14.4	2.7	4.	10.3	49.4			
	HIGH	5.2	3.	15.6	5.1	4.	20.4	4.6	4.	18.4	3.5	4.	14.0	68.4			
	N	129	123		138	142		139	138		114	120					
012 NIGHT OPERATIONS	MEAN	8.9	3.	26.7	8.2	5.	41.1	7.7	5.	38.5	6.5	5.	32.5	138.7			
	LOW	7.9	3.	23.7	7.3	4.	29.2	6.8	5.	34.0	5.8	5.	29.0	115.9			
	HIGH	10.0	4.	43.0	9.1	5.	45.5	8.6	6.	51.6	7.1	6.	42.6	179.7			
	N	133	130		138	143		137	127		136	125					
013 NBC OPERATIONS	MEAN	4.4	2.	8.8	4.5	4.	18.0	4.1	4.	16.4	4.0	5.	20.0	63.2			
	LOW	3.9	2.	7.8	4.0	4.	16.3	3.6	4.	14.4	3.6	4.	14.4	52.6			
	HIGH	5.0	3.	15.0	5.0	4.	20.3	4.6	5.	23.0	4.5	5.	22.5	80.5			
	N	134	124		144	144		143	139		142	138					
014 COMBAT IN FULLY-UP AREAS	MEAN	5.1	2.	13.2	5.5	3.	16.5	5.3	4.	21.2	4.9	4.	19.6	67.5			
	LOW	4.5	1.	4.5	4.9	3.	14.7	4.7	3.	14.1	4.4	3.	13.2	46.5			
	HIGH	5.7	2.	11.4	6.1	4.	26.4	5.8	4.	23.2	5.4	4.	21.6	88.6			
	N	115	124		133	141		135	143		130	137					
015 HOSTILE TAC AT ENVIRONMENT	MEAN	5.0	3.	15.0	4.1	3.	12.3	3.1	4.	12.4	2.9	4.	11.6	51.3			
	LOW	4.2	2.	9.4	3.5	3.	13.5	2.7	4.	13.8	2.6	3.	7.9	37.5			
	HIGH	5.7	3.	17.1	4.7	4.	18.5	3.5	4.	16.3	3.3	4.	13.2	63.1			
	N	128	132		133	129		132	146		131	131					
016 COMMUNICATIONS IN ENVIRONMENT	MEAN	7.3	4.	23.2	5.5	4.	27.3	4.6	4.	18.4	3.7	4.	14.8	86.4			
	LOW	6.2	4.	24.8	4.7	4.	18.4	4.0	4.	16.3	3.2	4.	12.3	72.4			
	HIGH	8.5	4.	34.0	6.2	4.	26.4	5.2	4.	20.3	4.2	4.	16.3	96.4			
	N	129	140		128	138		131	132		123	122					

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MEAN	LOW	HIGH	N	MEAN	LOW	HIGH	N	MEAN	LOW	HIGH	N	MEAN	LOW	HIGH	N	
Q17 BATTLE POSITIONS	MEAN	9.0	3.	27.0	4.5	4.	10.0	0.0	4.	32.0	7.3	4.	29.2	126.2			126.2
	LOW	7.6	2.	15.2	0.3	3.	24.3	7.1	4.	28.4	6.4	4.	25.6	94.1			94.1
	HIGH	10.3	3.	30.9	11.8	4.	41.2	8.9	5.	44.5	8.3	5.	41.5	160.1			160.1
	N	124	127	130	122	130	122	135	135	135	133	134					
Q18 BREACH MINEFIELDS AND OBSTACLES	MEAN	4.5	2.	3.0	4.2	3.	12.6	3.9	3.	11.7	3.7	3.	11.1	44.4			44.4
	LOW	4.0	2.	8.0	3.7	2.	7.4	3.5	3.	10.5	3.4	3.	10.2	36.1			36.1
	HIGH	5.1	2.	10.2	4.6	3.	13.8	4.2	4.	16.8	4.1	3.	12.1	53.1			53.1
	N	100	109	130	121	133	126	133	126	133	134	126					
Q19 EMPLOY COMPANY SERVICE SUPPORT	MEAN	9.3	4.	37.2	7.9	4.	31.6	4.7	4.	10.8	3.7	4.	14.8	102.4			102.4
	LOW	7.9	4.	31.6	6.6	4.	26.4	3.8	4.	15.2	2.8	3.	8.4	81.6			81.6
	HIGH	10.8	4.	43.2	9.2	5.	46.3	5.6	4.	22.4	4.5	4.	18.3	129.6			129.6
	N	110	143	125	138	117	122	117	122	91	91	91					
Q20 LEADER/COMMANDER SKILLS	MEAN	8.6	5.	43.0	8.9	6.	53.4	8.8	6.	52.8	7.4	6.	44.4	193.6			193.6
	LOW	7.2	4.	28.8	7.5	5.	37.5	7.4	6.	44.4	6.1	6.	36.6	147.3			147.3
	HIGH	9.9	5.	49.5	10.4	6.	62.4	10.3	6.	61.8	8.7	7.	60.9	234.6			234.6
	N	106	126	113	127	110	123	110	123	115	113	113					
TOTAL SUM OF PRODUCTS	MEAN			447.4			516.6			518.9			483.8	1950.9			1950.9
	LOW			311.5			434.0			417.8			371.1	1506.4			1506.4
	HIGH			549.5			629.7			645.1			603.3	2426.3			2426.3
	N																

TABLE IE. SFT IV COLLECTIVE TASKS--TIME AND FREQUENCIES

FACTORS APPLIED--

95 PER CENT PROFICIENCY
 25 PER CENT NOT PRESENT FOR TRAINING
 15 PER CENT TRAINER GRADE SUBSTITUTION
 10 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROB	MRS	FREQ	PROB	MRS	FREQ	HRS	FREQ	PROB	MRS	FREQ	PROB	MRS	FREQ	HOURS
Q1 TACTICAL MOVEMENTS	MEAN	8.4	2.	17.6	7.2	4.	28.8	6.7	4.	26.8	5.6	4.	22.4	22.4	5.6	4.	95.6
	LOW	7.5	2.	15.0	6.1	3.	18.3	5.7	4.	22.8	4.7	4.	19.8	19.8	4.7	4.	74.0
	HIGH	10.1	2.	20.2	8.2	4.	32.9	7.7	5.	38.5	6.4	5.	32.0	32.0	6.4	5.	123.5
	N	129	134		131	142		134	136		130	126					
Q2 SECURITY AND INTELLIGENCE OPNS	MEAN	5.3	2.	10.6	5.1	2.	10.2	4.5	2.	9.0	3.4	3.	10.2	10.2	3.4	3.	40.0
	LOW	4.4	2.	9.2	4.5	2.	9.0	4.0	2.	8.0	3.0	3.	9.0	9.0	3.0	3.	35.2
	HIGH	6.1	2.	12.2	5.7	2.	11.4	5.1	3.	15.3	3.8	4.	15.2	15.2	3.8	4.	54.1
	N	120	119		134	127		134	122		123	124					
Q3 COVER-CONCEALMENT	MEAN	6.6	2.	13.2	6.0	3.	18.0	5.8	4.	23.2	4.8	5.	24.0	24.0	4.8	5.	78.4
	LOW	5.4	2.	10.4	5.0	3.	15.0	5.0	4.	20.0	4.2	4.	16.8	16.8	4.2	4.	62.4
	HIGH	7.7	2.	15.4	6.9	4.	27.6	6.7	4.	26.8	5.4	5.	27.0	27.0	5.4	5.	96.8
	N	114	124		130	137		138	132		136	134					
Q4 USE NON-ORGANIC COMBAT SUPPORT	MEAN	4.1	3.	24.3	6.4	3.	19.2	4.4	3.	13.2	3.5	3.	10.5	10.5	3.5	3.	47.2
	LOW	3.9	2.	13.8	5.3	3.	15.9	3.7	2.	7.4	2.8	2.	5.6	5.6	2.8	2.	42.7
	HIGH	9.4	3.	28.2	7.4	4.	29.6	5.1	4.	20.4	4.3	4.	17.2	17.2	4.3	4.	95.4
	N	129	141		130	141		114	119		95	88					
Q5 EMPLOY ORGANIC SMALL ARMS	MEAN	5.8	2.	11.6	5.3	2.	10.6	5.5	3.	16.5	5.7	4.	22.8	22.8	5.7	4.	61.5
	LOW	4.4	2.	9.6	4.7	2.	9.4	5.0	3.	15.0	5.0	4.	20.0	20.0	5.0	4.	54.0
	HIGH	6.4	2.	13.6	5.8	3.	17.4	6.0	4.	24.0	6.3	5.	31.5	31.5	6.3	5.	86.5
	N	74	77		126	129		134	132		139	135					
Q6 EMPLOY FIGHTING VEHICLES	MEAN	8.3	2.	17.8	8.5	4.	34.0	7.4	5.	37.0	5.9	5.	29.5	29.5	5.9	5.	118.3
	LOW	7.5	2.	15.0	7.4	3.	22.2	6.4	4.	25.6	5.2	4.	20.8	20.8	5.2	4.	83.6
	HIGH	10.4	3.	31.2	9.7	4.	38.8	8.4	5.	42.0	6.7	5.	31.5	31.5	6.7	5.	145.5
	N	101	122		127	134		137	134		128	134					
Q7 EMPLOY ORGANIC ANTI-TANK WEAPONS	MEAN	4.0	2.	16.0	7.3	4.	20.2	6.0	4.	27.6	5.9	5.	29.5	29.5	5.9	5.	102.3
	LOW	3.4	2.	13.2	6.3	3.	18.9	6.0	4.	24.0	5.1	4.	20.4	20.4	5.1	4.	76.5
	HIGH	9.3	3.	27.9	8.2	4.	32.8	7.8	4.	31.2	6.7	6.	40.2	40.2	6.7	6.	132.1
	N	119	135		130	140		136	126		124	123					
Q8 EMPLOY ORGANIC MORTARS	MEAN	7.6	2.	15.2	6.4	3.	20.4	5.5	4.	22.0	4.9	4.	19.6	19.6	4.9	4.	77.2
	LOW	6.3	2.	12.6	5.8	2.	11.4	4.8	3.	14.4	4.2	4.	16.8	16.8	4.2	4.	55.4
	HIGH	8.9	2.	17.4	7.8	3.	23.6	6.1	4.	24.4	5.5	5.	27.5	27.5	5.5	5.	92.0
	N	124	126		129	114		117	113		99	94					

OUTSTATION

	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MEAN	EDU	PROB	ADJ	EDU	PROB	ADJ	EDU	PROB	ADJ	EDU	PROB	ADJ	EDU	PROB	ADJ	
00 FIVE AND SEVEN	MEAN 4.4	2	16.8	8.0	4	32.0	7.8	5	39.0	7.4	5	37.0	7.4	5	37.0	7.4	124.8
	LOW 1.1	2	18.2	5.9	4	27.6	6.3	4	27.6	6.3	4	25.2	6.3	4	25.2	6.3	94.6
	HIGH 7.8	2	19.2	9.1	4	36.6	8.7	5	43.5	8.5	5	42.5	8.5	5	42.5	8.5	141.6
	N 106	110		127	133		136	137		131	120		131	120			
010 RECONNAISSANCE	MEAN 6.2	2	13.8	5.3	3	15.0	5.7	4	22.8	5.0	4	20.0	5.0	4	20.0	5.0	72.5
	LOW 5.0	2	11.4	4.7	2	9.4	5.0	4	20.9	5.4	4	17.6	5.4	4	17.6	5.4	59.9
	HIGH 7.4	2	16.0	5.9	3	17.7	6.6	4	25.6	6.5	4	22.0	6.5	4	22.0	6.5	91.1
	N 117	110		126	135		133	136		127	130		127	130			
011 ORGANIZATION	MEAN 4.7	2	9.4	4.5	3	13.5	4.1	3	12.3	3.1	4	12.4	3.1	4	12.4	3.1	47.4
	LOW 4.1	2	8.2	4.0	3	12.0	3.5	3	10.9	2.7	3	8.1	2.7	3	8.1	2.7	39.1
	HIGH 5.2	2	10.6	5.1	4	20.6	4.6	4	14.6	3.5	4	14.0	3.5	4	14.0	3.5	63.2
	N 129	129		138	142		139	138		114	120		114	120			
012 NIGHT OPERATIONS	MEAN 8.0	2	17.8	8.2	4	32.8	7.7	4	30.8	6.5	4	26.0	6.5	4	26.0	6.5	107.4
	LOW 7.2	2	15.8	7.3	4	29.2	6.8	4	27.2	5.8	4	23.2	5.8	4	23.2	5.8	95.4
	HIGH 10.0	3	30.0	9.1	4	36.6	13.7	127	43.0	7.1	5	35.5	7.1	5	35.5	7.1	146.0
	N 133	130		138	147		137	127		136	125		136	125			
013 NBC OPERATIONS	MEAN 4.6	2	8.8	4.5	4	14.0	4.1	4	14.4	4.0	4	16.0	4.0	4	16.0	4.0	59.2
	LOW 3.0	2	7.8	4.0	3	12.0	3.6	4	14.4	3.5	4	14.4	3.5	4	14.4	3.5	49.6
	HIGH 5.0	2	10.0	5.0	4	20.0	4.6	4	14.4	4.5	4	18.0	4.5	4	18.0	4.5	66.4
	N 134	124		144	146		143	139		142	138		142	138			
014 COMBAT IN BUILT-UP AREAS	MEAN 5.1	2	10.2	5.5	2	11.0	5.3	3	15.9	4.9	3	14.7	4.9	3	14.7	4.9	51.9
	LOW 4.5	2	8.2	4.9	2	9.4	4.7	2	9.4	4.4	2	8.8	4.4	2	8.8	4.4	32.5
	HIGH 5.7	2	11.6	6.1	3	19.3	5.9	3	17.4	5.4	3	16.2	5.4	3	16.2	5.4	63.3
	N 115	124		133	141		135	143		130	137		130	137			
015 HOSTILE TAC AIR ENVIRONMENT	MEAN 5.0	2	10.0	4.1	2	11.2	3.1	3	9.3	2.9	3	9.7	2.9	3	9.7	2.9	34.2
	LOW 4.2	2	8.4	3.5	2	7.0	2.7	3	4.1	2.6	2	5.2	2.6	2	5.2	2.6	28.7
	HIGH 5.7	2	11.6	4.7	3	14.1	3.5	4	14.0	3.3	3	9.9	3.3	3	9.9	3.3	49.4
	N 120	132		133	120		132	140		131	131		131	131			
016 COMMUNICATIONS IN FM ENVIRONMENT	MEAN 7.3	3	21.9	5.5	4	22.0	4.6	4	19.4	3.7	3	11.1	3.7	3	11.1	3.7	73.4
	LOW 5.2	3	18.6	4.7	3	14.1	4.0	3	12.0	3.2	3	9.6	3.2	3	9.6	3.2	54.3
	HIGH 9.5	4	34.0	6.2	4	26.0	5.2	4	20.9	4.2	4	16.8	4.2	4	16.8	4.2	96.4
	N 124	160		128	130		131	132		123	122		123	122			

FUNCTION	BATTALION						COMPANY						PLATOON						SQUAD						YEAR TOTAL	
	MEAN	LOW	HIGH	N	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO		PRON
017 BATTLE POSITIONS	MEAN	9.0	2.0	14.0	9.5	3.0	28.5	8.0	4.0	32.0	7.3	4.0	29.2	7.3	4.0	29.2	7.3	4.0	29.2	7.3	4.0	29.2	7.3	4.0	107.7	
	LOW	7.5	2.0	15.2	8.2	2.0	16.5	7.1	4.0	28.4	6.2	3.0	19.2	6.2	3.0	19.2	6.2	3.0	19.2	6.2	3.0	19.2	6.2	3.0	79.4	
	HIGH	10.3	2.0	20.6	10.8	3.0	32.4	8.9	4.0	35.6	8.3	4.0	33.2	8.3	4.0	33.2	8.3	4.0	33.2	8.3	4.0	33.2	8.3	4.0	121.9	
	N	124	127		130	122		135	135		133	134		133	134		133	134		133	134		133	134		
018 TOPEAK MINIFIELDS AND OBSTACLES	MEAN	4.5	2.0	9.0	4.2	2.0	8.4	3.9	2.0	7.8	3.7	2.0	7.4	3.7	2.0	7.4	3.7	2.0	7.4	3.7	2.0	7.4	3.7	2.0	32.4	
	LOW	3.0	2.0	4.0	3.7	2.0	7.4	3.5	2.0	7.0	3.4	2.0	6.8	3.4	2.0	6.8	3.4	2.0	6.8	3.4	2.0	6.8	3.4	2.0	20.2	
	HIGH	5.1	2.0	10.2	4.6	2.0	9.2	4.2	3.0	12.6	4.1	2.0	8.2	4.1	2.0	8.2	4.1	2.0	8.2	4.1	2.0	8.2	4.1	2.0	40.2	
	N	104	100		130	121		133	126		134	126		133	126		134	126		134	126		134	126		
019 EMPLOY COMBAT SERVICE SUPPORT	MEAN	9.3	3.0	27.9	7.9	4.0	31.4	4.7	3.0	14.1	3.7	3.0	11.1	3.7	3.0	11.1	3.7	3.0	11.1	3.7	3.0	11.1	3.7	3.0	84.7	
	LOW	7.9	3.0	23.7	6.6	3.0	19.3	3.8	3.0	11.4	2.8	2.0	5.6	2.8	2.0	5.6	2.8	2.0	5.6	2.8	2.0	5.6	2.8	2.0	60.5	
	HIGH	10.4	4.0	43.2	9.2	4.0	36.4	5.6	4.0	22.4	4.5	4.0	16.0	4.5	4.0	16.0	4.5	4.0	16.0	4.5	4.0	16.0	4.5	4.0	120.4	
	N	114	143		125	134		117	122		91	91		91	91		91	91		91	91		91	91		
020 LEADER/COMMANDER SKILLS	MEAN	4.5	4.0	34.4	8.9	5.0	44.5	8.8	5.0	44.0	7.4	5.0	37.0	7.4	5.0	37.0	7.4	5.0	37.0	7.4	5.0	37.0	7.4	5.0	150.9	
	LOW	7.2	4.0	28.8	7.5	4.0	30.0	7.4	5.0	37.0	6.1	5.0	30.5	6.1	5.0	30.5	6.1	5.0	30.5	6.1	5.0	30.5	6.1	5.0	124.3	
	HIGH	9.9	4.0	39.6	10.4	5.0	52.0	10.3	5.0	51.5	8.7	6.0	52.2	8.7	6.0	52.2	8.7	6.0	52.2	8.7	6.0	52.2	8.7	6.0	195.3	
	N	105	126		113	127		112	123		115	113		115	113		115	113		115	113		115	113		
TOTAL SUM OF PRODUCTS	MEAN	374.3			436.8			436.8			436.8			436.8			436.8			436.8			436.8			1508.3
	LOW	264.2			315.2			315.2			315.2			315.2			315.2			315.2			315.2			1232.3
	HIGH	422.3			532.3			532.3			532.3			532.3			532.3			532.3			532.3			2011.0

TABLE IF. SFI IV COLLECTIVE TASKS--TIME AND FREQUENCIES

FACTORS APPLIED--

95 PER CENT PROFICIENCY
 25 PER CENT NOT PRESENT FOR TRAINING
 25 PER CENT TRAINER GRADE SUBSTITUTION
 15 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	
01 TACTICAL MOVEMENTS	MEAN	12.2	4.	49.8	10.0	6.	60.3	9.3	7.	65.1	7.8	7.	54.6	7.	54.6	228.5	
	LOW	10.4	3.	31.2	8.5	5.	42.5	7.9	6.	47.4	6.5	7.	45.5	7.	45.5	166.6	
	HIGH	14.0	4.	56.0	11.4	6.	59.4	10.7	3.	65.6	8.9	8.	71.2	8.	71.2	281.2	
	N	129	134		131	142		138	136		133	126		126			
02 SECURITY AND INTELLIGENCE CPNS	MEAN	7.4	3.	22.2	7.1	4.	28.4	6.3	4.	25.2	4.7	3.	23.3	3.	23.3	99.3	
	LOW	6.4	3.	13.2	6.3	3.	18.3	5.6	4.	22.4	4.2	5.	21.0	5.	21.0	81.5	
	HIGH	8.5	3.	25.5	7.9	4.	31.6	7.1	5.	35.5	5.3	6.	31.8	6.	31.8	124.4	
	N	123	119		134	127		134	122		123	124		124			
03 COVER-UNCOVER-REINFORCEMENT	MEAN	9.2	4.	16.8	8.3	5.	41.5	6.1	6.	44.6	6.7	8.	53.0	8.	53.0	188.5	
	LOW	7.5	3.	22.5	6.4	5.	34.5	6.4	6.	41.4	5.8	7.	40.6	7.	40.6	139.8	
	HIGH	10.7	4.	42.8	9.6	6.	37.6	9.3	7.	65.1	7.5	9.	67.5	9.	67.5	233.0	
	N	114	128		137	137		138	132		136	134		134			
04 USE NON-DESTRUCTIVE COMBAT SUPPORT	MEAN	11.3	5.	56.5	8.9	5.	44.5	6.1	5.	30.5	4.9	5.	24.5	5.	24.5	156.0	
	LOW	9.6	4.	33.4	7.4	5.	37.3	5.1	4.	23.4	3.9	4.	15.6	4.	15.6	111.4	
	HIGH	13.1	5.	65.5	10.3	6.	51.9	7.1	6.	42.6	6.0	6.	36.3	6.	36.3	205.9	
	N	129	143		137	141		114	118		85	88		88			
05 EMPLOY ORGANIC SHALL FORCE	MEAN	8.1	3.	24.3	7.4	4.	29.2	7.6	5.	39.4	7.9	7.	55.3	7.	55.3	147.2	
	LOW	6.7	3.	23.1	5.5	4.	26.3	6.9	5.	36.5	6.9	6.	41.4	6.	41.4	122.0	
	HIGH	9.5	4.	34.0	8.1	5.	40.5	8.3	6.	49.8	8.8	8.	70.4	8.	70.4	198.7	
	N	76	77		126	129		134	132		139	135		135			
06 EMPLOY FIGHTING VEHICLES	MEAN	12.4	4.	43.6	11.8	6.	70.9	10.3	8.	82.4	8.2	8.	65.6	8.	65.6	268.4	
	LOW	10.4	4.	41.6	10.7	5.	51.5	8.9	7.	62.3	7.2	7.	50.4	7.	50.4	205.2	
	HIGH	14.5	5.	73.5	13.6	6.	91.0	11.7	8.	91.6	9.3	9.	83.7	9.	83.7	330.0	
	N	101	123		127	134		137	134		128	134		134			
07 EMPLOY ORGANIC ARTILLERY WEAPONRY	MEAN	11.1	4.	48.4	13.1	6.	63.5	9.6	7.	67.2	8.2	9.	73.9	9.	73.9	246.0	
	LOW	9.2	4.	35.8	8.4	5.	44.3	8.3	6.	49.8	7.1	7.	49.7	7.	49.7	188.3	
	HIGH	12.9	5.	64.5	11.6	7.	73.8	10.8	7.	75.6	9.3	10.	93.0	10.	93.0	312.9	
	N	119	135		131	138		136	126		124	123		123			
08 EMPLOY ORGANIC WEAPONRY	MEAN	10.6	4.	43.4	7.5	5.	47.5	7.6	6.	45.6	6.8	7.	47.5	7.	47.5	183.1	
	LOW	8.3	4.	35.2	5.1	4.	32.4	6.7	5.	33.5	5.8	6.	34.8	6.	34.8	135.9	
	HIGH	12.2	4.	44.8	10.8	5.	54.1	8.5	7.	59.5	7.6	9.	68.4	9.	68.4	230.7	
	N	174	128		129	118		117	113		99	94		94			

YEAR	TOTAL
1960	100
1961	100
1962	100
1963	100
1964	100
1965	100
1966	100
1967	100
1968	100
1969	100
1970	100
1971	100
1972	100
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2098	100
2099	100
2100	100

QUESTIONS	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MEAN	LOW	HIGH	N	MEAN	LOW	HIGH	N	MEAN	LOW	HIGH	N	MEAN	LOW	HIGH	N	
004 FIRE AND MANEUVER	MEAN	11.7	4.	45.8	11.1	6.	60.0	10.8	8.	66.4	10.3	8.	62.4	262.2	216.1	356.5	
	LOW	9.9	3.	24.7	9.6	6.	57.6	9.6	7.	67.2	8.0	7.	61.6				
	HIGH	14.3	4.	53.2	13.4	7.	84.2	12.1	9.	108.3	11.0	9.	106.2				
	N	106	110		127	131		134	132		131	130					
010 RECONNAISSANCE	MEAN	9.6	4.	34.4	7.4	5.	37.1	7.9	6.	47.4	6.9	6.	41.4	164.2	128.6	200.9	
	LOW	8.2	3.	24.6	6.5	4.	26.3	6.9	6.	41.4	6.1	6.	36.6				
	HIGH	11.1	4.	44.4	9.2	5.	41.1	8.9	7.	62.3	7.6	7.	53.2				
	N	117	110		126	135		133	136		127	130					
011 RECONNAISSANCE	MEAN	6.5	4.	26.0	6.4	5.	31.5	5.7	5.	24.5	4.3	6.	25.4	111.6	89.1	139.2	
	LOW	5.7	3.	17.1	5.6	5.	28.1	5.0	5.	25.0	3.6	5.	19.4				
	HIGH	7.2	4.	28.8	7.1	6.	42.6	6.4	6.	34.4	4.9	6.	29.4				
	N	124	129		136	142		139	136		114	123					
012 NIGHT OPERATIONS	MEAN	10.4	4.	43.6	11.4	7.	79.4	10.7	7.	74.4	9.0	7.	63.4	267.3	227.8	332.9	
	LOW	11.0	4.	44.0	12.1	6.	63.6	9.5	7.	66.5	8.1	7.	56.7				
	HIGH	13.9	5.	69.5	12.6	7.	88.2	12.0	8.	96.0	9.9	8.	79.2				
	N	133	130		138	143		137	127		136	125					
013 HQ OPERATIONS	MEAN	6.1	3.	19.3	6.3	6.	37.4	5.7	6.	34.2	5.6	7.	39.2	129.5	104.2	157.9	
	LOW	5.4	3.	16.2	5.6	5.	28.1	5.0	6.	33.0	5.0	6.	30.0				
	HIGH	6.9	4.	27.6	6.9	6.	41.4	6.4	7.	44.8	6.3	7.	44.1				
	N	134	124		144	144		143	139		142	136					
014 COMBAT IN BUILT-UP AREAS	MEAN	7.1	3.	21.3	7.4	4.	31.4	7.4	5.	37.4	6.8	5.	34.0	122.7	90.2	144.2	
	LOW	6.1	2.	12.6	6.8	4.	27.2	6.5	4.	26.0	6.1	4.	24.4				
	HIGH	7.9	3.	23.7	8.5	5.	47.5	8.1	5.	43.5	7.5	5.	37.5				
	N	115	124		137	141		135	143		130	137					
015 HOSTILE TACTICS IN ENVIRONMENT	MEAN	6.9	4.	27.4	5.7	4.	37.4	4.3	5.	21.5	4.0	5.	20.0	91.9	70.4	116.5	
	LOW	5.8	3.	17.4	4.9	4.	14.6	3.8	5.	19.0	3.6	4.	14.4				
	HIGH	7.9	4.	31.6	6.5	5.	32.5	4.9	6.	29.4	4.6	5.	23.0				
	N	128	132		133	129		132	140		131	131					
016 COMMUNICATIONS IN ENVIRONMENT	MEAN	11.1	5.	51.5	7.6	6.	45.6	6.4	6.	38.4	5.1	5.	25.5	160.3	125.5	203.4	
	LOW	8.6	5.	43.0	6.5	5.	32.5	5.6	5.	28.0	4.4	5.	22.3				
	HIGH	11.8	6.	71.8	8.4	6.	51.6	7.2	6.	43.2	5.8	6.	34.8				
	N	129	140		128	139		131	130		123	122					

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MEAN	LOW	HIGH	N	MRS	FREQ	PROJ	HRS	FREQ	PROJ	MRS	FREQ	PROJ	HRS	FREQ	PROJ	
Q17 BATTLE POSITIONING																	
MEAN	12.5	4.	57.0		13.2	5.	66.3	11.1	6.	66.6	19.1	6.	60.6				243.2
LOW	18.6	3.	31.8		11.5	4.	46.0	9.9	6.	59.4	8.9	5.	44.5				181.7
HIGH	14.3	4.	57.2		15.0	5.	75.3	12.4	7.	86.8	11.5	7.	80.5				299.5
N	124	127			130	127		135	135		133	134					
Q18 BREACH MINIFIELDS AND OBSTACLES																	
MEAN	6.3	3.	15.9		5.8	4.	23.2	5.4	4.	21.6	5.1	4.	20.4				84.1
LOW	5.6	3.	15.8		5.1	3.	15.3	4.9	4.	19.6	4.7	4.	18.8				70.5
HIGH	7.1	3.	21.3		6.4	4.	25.6	5.8	5.	23.0	5.7	4.	22.8				98.7
N	108	109			137	121		133	126		134	126					
Q19 EMPLOY COMPANY SERVICE SUPPORT																	
MEAN	15.9	5.	66.5		11.0	6.	66.3	6.5	5.	32.5	5.1	5.	25.5				188.5
LOW	11.0	5.	55.0		9.2	5.	46.3	5.3	5.	26.5	3.9	4.	15.6				143.1
HIGH	15.0	6.	91.0		12.8	7.	89.6	7.8	6.	46.8	6.3	6.	37.8				264.2
N	118	143			125	133		117	122		91	91					
Q20 LEADER/COMMANDER SKILLS																	
MEAN	12.0	7.	84.0		12.4	8.	39.2	12.2	9.	189.8	10.3	9.	92.7				385.7
LOW	10.0	6.	60.0		13.4	7.	72.3	10.3	8.	82.4	8.5	8.	68.2				263.2
HIGH	13.8	7.	95.6		14.5	9.	130.5	14.3	9.	128.7	12.1	10.	121.3				476.8
N	106	126			113	127		118	123		115	113					
TOTAL SUM OF PRODUCTS																	
MEAN			823.9				988.5						929.3				3749.1
LOW			613.2				746.4						710.6				2872.9
HIGH			1028.3				1223.6						1191.5				4705.3

TABLE IG. SFT IV COLLECTIVE TASKS--TIME AND FREQUENCIES

OPERATION	BATTALION			COMPANY			PLATOON			SQUAD			YEAR TOTAL
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	
01 TACTICAL MOVEMENTS	MEAN	28.3	4.	81.2	16.6	6.	39.6	15.5	7.	108.5	12.9	7.	379.6
	LOW	17.3	3.	51.9	14.1	5.	70.5	13.2	6.	79.2	10.9	7.	277.9
	HIGH	23.3	4.	33.2	13.9	6.	111.4	17.8	8.	142.4	14.8	8.	467.4
	N	129	114		131	142		138	136		130	126	
02 SECURITY AND INTELLIGENCE	MEAN	12.2	3.	36.6	11.8	4.	47.2	10.4	4.	41.6	7.9	5.	164.9
	LOW	10.6	3.	31.8	10.4	3.	31.2	9.2	4.	36.8	6.9	5.	134.3
	HIGH	14.1	3.	42.3	11.2	4.	52.9	11.8	5.	59.3	8.8	6.	206.9
	N	120	119		134	127		134	122		123	124	
03 CONVENT-CONCEALMENT	MEAN	15.2	4.	60.8	13.9	5.	69.5	13.4	6.	80.4	11.1	8.	299.5
	LOW	12.5	3.	37.5	11.5	5.	57.5	11.5	6.	69.0	9.7	7.	231.9
	HIGH	17.8	4.	71.2	15.9	6.	75.4	15.5	7.	108.5	12.5	9.	387.6
	N	114	129		130	137		138	132		136	134	
04 USE NON-ORGANIC COMBAT SUPPORT	MEAN	14.7	5.	91.5	14.8	5.	74.0	10.2	5.	51.0	8.1	5.	259.0
	LOW	15.9	4.	67.6	12.7	5.	51.3	8.5	4.	34.3	6.5	4.	184.6
	HIGH	21.7	5.	108.5	17.1	6.	132.6	11.8	6.	70.8	9.9	6.	341.1
	N	129	143		130	141		114	119		85	88	
05 EMPLOY ORGANIC SMALL ARMS	MEAN	13.4	3.	40.2	12.2	4.	48.9	12.7	5.	63.5	13.2	7.	244.9
	LOW	11.1	3.	33.3	13.9	4.	43.6	11.5	5.	57.5	11.5	6.	203.4
	HIGH	15.7	4.	62.8	13.4	5.	67.3	13.9	6.	83.4	14.6	8.	330.0
	N	76	77		126	123		134	132		139	135	
06 EMPLOY FIGHTING VEHICLES	MEAN	20.6	4.	82.4	19.6	6.	117.6	17.1	6.	136.8	17.6	8.	445.6
	LOW	17.3	4.	69.2	17.1	5.	85.5	14.8	7.	103.5	12.8	7.	342.3
	HIGH	24.3	5.	120.8	22.4	6.	134.4	19.4	8.	155.2	15.5	9.	549.1
	N	101	122		127	134		137	134		128	134	
07 EMPLOY ORGANIC ANTI-TANK WEAPONS	MEAN	18.5	4.	74.0	16.9	6.	131.4	15.9	7.	111.3	13.6	9.	409.1
	LOW	15.2	4.	63.8	14.6	5.	73.3	13.9	6.	83.4	11.8	7.	299.8
	HIGH	21.5	5.	107.5	19.9	7.	132.3	18.0	7.	126.0	15.5	10.	520.8
	N	113	136		130	138		136	126		124	123	
08 EMPLOY ORGANIC MORTARS	MEAN	17.6	4.	73.4	15.7	5.	78.5	12.7	6.	76.2	11.3	7.	304.2
	LOW	14.6	4.	53.4	13.4	4.	53.6	11.1	5.	55.5	9.7	6.	225.7
	HIGH	20.3	4.	81.2	19.0	5.	90.3	14.1	7.	98.7	12.7	9.	364.2
	N	124	128		128	113		117	113		93	94	

95 PER CENT PROFICIENCY
 95 PER CENT NOT PRESENT FOR TRAINING
 90 PER CENT TRAINER GRADE SUBSTITUTION
 35 PER CENT CHANGE IN DUTY POSITION

FACTORS APPLIED-

QUESTION

YEAR
TOTAL

SQUAD

PLATOON

COMPANY

BATTALION

HOURS

PMOJ

FREQ

HRS

PROO

FREQ

HRS

PROJ

FREQ

HRS

PROO

FREQ

HRS

469.4

136.3

8.

17.1

144.0

8.

18.0

111.0

6.

13.5

77.6

4.

19.4

150.1

102.2

7.

14.6

111.3

7.

15.9

35.6

6.

15.9

43.2

3.

18.4

593.1

176.4

9.

13.6

180.9

9.

20.1

147.5

7.

21.0

68.8

4.

20.2

272.8

61.2

6.

11.5

69.0

6.

13.2

51.0

5.

12.2

61.6

4.

15.3

334.5

60.3

7.

12.7

103.6

7.

14.8

64.3

5.

13.6

74.0

4.

13.6

186.3

31.3

5.

6.2

41.5

5.

8.3

46.0

5.

9.2

23.5

1.

4.5

231.0

48.6

6.

8.1

63.6

6.

10.6

73.3

6.

11.8

43.0

4.

12.4

444.3

105.3

7.

15.0

124.6

7.

17.8

132.3

7.

18.9

97.4

4.

20.6

377.9

93.8

7.

13.4

109.9

7.

15.7

131.4

6.

16.9

72.8

4.

18.2

552.9

131.2

8.

16.4

159.2

8.

19.9

147.3

7.

21.0

115.5

5.

23.1

214.4

54.4

7.

9.2

57.0

6.

9.5

62.4

6.

13.4

32.6

1.

10.2

172.6

49.8

6.

8.3

49.8

6.

8.3

46.3

5.

11.5

46.3

4.

11.5

262.0

72.8

7.

10.4

74.2

7.

10.6

63.3

6.

11.5

46.3

4.

11.5

203.7

56.5

5.

11.3

61.0

5.

12.2

50.8

4.

12.7

35.4

1.

11.8

150.4

40.8

4.

10.2

43.6

4.

10.9

45.2

4.

11.3

23.8

1.

10.2

239.6

62.5

5.

12.5

67.3

5.

13.4

73.5

5.

14.1

39.5

1.

13.7

153.5

33.5

5.

6.7

36.0

5.

7.2

33.3

4.

9.5

25.0

1.

11.3

116.5

24.3

4.

6.3

31.0

5.

6.2

32.3

4.

9.1

23.1

1.

10.2

193.9

38.3

5.

7.6

48.6

6.

8.1

54.5

5.

13.9

63.8

4.

13.7

266.4

42.5

5.

4.5

63.6

6.

10.6

76.7

6.

17.7

3.7

1.

10.3

209.0

37.3

5.

7.4

46.0

5.

9.2

54.5

6.

16.0

21.7

1.

10.3

333.6

58.2

6.

9.7

72.3

6.

12.0

95.4

6.

14.7

113.6

1.

13.7

122

123

123

123

AD-A184 397

ARMY TRAINING STUDY: BATTALION TRAINING SURVEY VOLUMES

3/4

1 AND 2(U) ACTUARIAL RESEARCH CORP FALLS CHURCH VA*

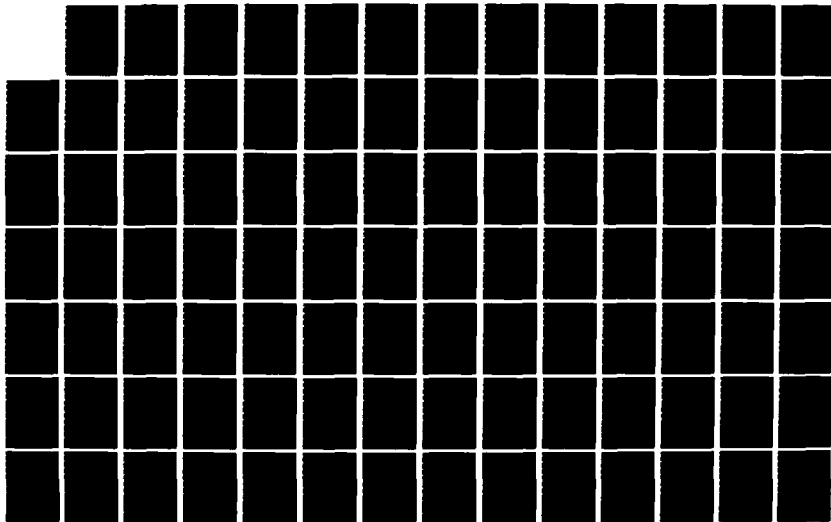
F J BROWN ET AL 88 AUG 78 SBT-AD-F088 105

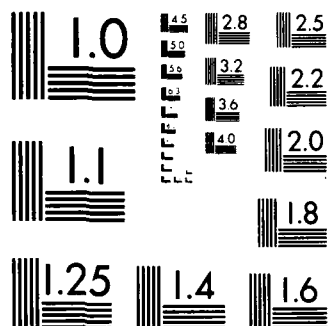
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	
017 BATTLE POSITIONS	MEAN	20.8	4.	83.2	21.9	5.	139.5	18.5	6.	111.0	16.9	6.	101.4	6.	101.4	405.1	
	LOW	17.6	3.	52.8	19.2	4.	76.8	16.4	6.	98.4	14.8	5.	74.0	5.	74.0	302.0	
	HIGH	23.6	4.	95.2	24.9	5.	124.5	20.6	7.	144.2	19.2	7.	134.4	7.	134.4	498.3	
	N	124	127		130	122		135	135		133	134					
018 BREACH MINIFIELDS AND OBSTACLES	MEAN	10.4	3.	31.2	9.7	4.	38.8	9.0	4.	36.0	8.5	4.	34.3	4.	34.3	140.8	
	LOW	9.2	3.	27.6	8.5	3.	25.5	8.1	4.	32.4	7.9	4.	31.6	4.	31.6	117.1	
	HIGH	11.8	3.	35.4	13.6	4.	42.4	9.7	5.	48.5	9.5	4.	38.8	4.	38.8	164.3	
	N	108	109		130	121		133	126		134	126					
019 EMPLOY COMBAT SERVICE SUPPORT	MEAN	21.5	5.	107.5	18.2	6.	139.2	10.9	5.	54.5	8.5	5.	42.5	5.	42.5	313.7	
	LOW	18.2	5.	91.0	15.2	5.	76.0	8.8	5.	44.0	6.5	4.	28.0	4.	28.0	237.0	
	HIGH	24.9	6.	149.4	21.3	7.	149.1	12.9	6.	77.4	13.4	6.	62.4	6.	62.4	438.3	
	N	110	143		125	138		117	122		91	91					
020 LEADER/COMMANDER SKILLS	MEAN	19.9	7.	139.3	21.6	8.	164.8	20.3	9.	182.7	17.1	9.	153.9	9.	153.9	648.7	
	LOW	16.6	6.	99.6	17.3	7.	121.1	17.1	8.	136.8	14.1	8.	112.8	8.	112.8	478.3	
	HIGH	22.9	7.	163.3	24.0	9.	216.3	23.8	9.	214.2	20.1	10.	201.0	10.	201.0	791.5	
	N	166	126		113	127		118	123		115	113					
TOTAL SUM OF PRODUCTS	MEAN			1365.0			1642.6			1566.4			1544.5			6217.5	
	LOW			1017.2			1239.8			1332.7			1182.7			4722.4	
	HIGH			1739.3			2032.5			2097.4			1961.1			7828.3	

TABLE IIIA. SET VI ARIFP MISSION TRAINING TIME AND FREQUENCY

FACTORS APPLIED-

95 PER CENT PROFICIENCY
 25 PER CENT NOT PRESENT FOR TRAINING
 15 PER CENT TRAINER GRADE SUBSTITUTION
 75 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR	
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	TOTAL HOURS
Q1 MOVEMENT TO CONTACT	MEAN	6.0	3.	18.0	6.3	4.	25.2	5.4	5.	27.0	4.3	5.	21.5	5.	21.5	4.3	5.	91.7
	LOW	5.4	3.	16.2	5.7	4.	22.8	4.9	4.	19.6	3.8	5.	19.0	5.	19.0	3.8	5.	77.4
	HIGH	6.6	3.	19.5	6.9	5.	34.5	5.8	5.	29.0	4.8	6.	28.8	6.	28.8	4.8	6.	111.8
	N	131	127		139	131		138	127		113	111						
Q2 HASTY ATTACK	MEAN	5.6	3.	16.8	5.8	4.	23.2	5.1	6.	30.6	4.1	5.	20.5	5.	20.5	4.1	5.	91.1
	LOW	5.0	3.	15.0	5.2	4.	20.8	4.5	5.	22.5	3.6	5.	18.0	5.	18.0	3.6	5.	76.3
	HIGH	6.1	3.	18.3	6.3	5.	31.5	5.7	6.	34.2	4.6	6.	27.6	6.	27.6	4.6	6.	111.6
	N	131	127		134	132		130	135		99	101						
Q3 DELIRATE ATTACK	MEAN	7.0	3.	23.7	7.3	4.	29.2	5.8	5.	29.0	5.0	5.	25.0	5.	25.0	5.0	5.	106.0
	LOW	7.2	3.	21.6	6.7	4.	26.8	5.2	5.	26.0	4.4	5.	22.0	5.	22.0	4.4	5.	96.4
	HIGH	8.5	4.	34.4	8.0	5.	40.0	6.4	6.	38.4	5.6	6.	33.6	6.	33.6	5.6	6.	146.4
	N	129	136		133	132		128	133		95	95						
Q4 EXPLOITATION	MEAN	5.7	3.	17.1	5.4	3.	16.2	4.4	3.	13.2	3.7	4.	14.8	4.	14.8	3.7	4.	61.3
	LOW	5.2	2.	10.4	4.9	3.	14.7	3.9	3.	11.7	3.1	3.	9.3	3.	9.3	3.1	3.	46.1
	HIGH	6.3	3.	18.9	6.0	3.	18.0	5.0	4.	20.0	4.4	4.	17.6	4.	17.6	4.4	4.	74.5
	N	136	135		127	124		95	85		65	56						
Q5 NIGHT ATTACK	MEAN	8.1	4.	32.4	7.9	4.	31.6	7.1	5.	35.5	5.9	4.	23.6	4.	23.6	5.9	4.	123.1
	LOW	7.4	3.	22.2	7.2	4.	28.8	6.4	5.	32.0	5.2	4.	20.8	4.	20.8	5.2	4.	103.8
	HIGH	8.7	4.	34.8	8.5	5.	42.5	7.9	5.	39.0	6.6	5.	33.0	5.	33.0	6.6	5.	149.3
	N	130	135		131	120		127	121		104	96						
Q6 OFFENSE	MEAN	12.2	3.	36.6	11.2	4.	44.8	9.7	6.	58.2	6.4	6.	38.4	6.	38.4	6.4	6.	178.0
	LOW	10.9	3.	32.7	10.1	4.	40.4	8.6	5.	43.0	5.7	5.	28.5	5.	28.5	5.7	5.	144.6
	HIGH	13.4	4.	53.6	12.4	5.	62.0	10.8	6.	64.8	7.2	6.	43.2	6.	43.2	7.2	6.	223.6
	N	126	134		130	124		133	139		111	118						
Q7 DEFAY	MEAN	9.6	3.	28.8	9.2	5.	46.0	7.6	6.	45.6	5.3	5.	26.5	5.	26.5	5.3	5.	146.0
	LOW	8.5	3.	25.5	8.2	4.	32.4	6.6	5.	33.0	4.6	5.	23.0	5.	23.0	4.6	5.	114.3
	HIGH	10.7	4.	42.8	10.2	5.	51.0	8.6	6.	51.6	6.0	6.	36.0	6.	36.0	6.0	6.	181.6
	N	133	136		132	120		121	126		86	89						
Q8 DISENGAGE	MEAN	6.5	3.	19.5	6.2	4.	24.8	5.4	4.	22.4	4.8	4.	19.2	4.	19.2	4.8	4.	85.0
	LOW	5.4	3.	17.4	5.5	4.	22.0	5.0	4.	20.0	4.1	4.	16.4	4.	16.4	4.1	4.	75.8
	HIGH	7.1	4.	28.4	6.9	4.	27.6	6.2	5.	31.0	5.5	5.	27.5	5.	27.5	5.5	5.	114.5
	N	124	135		126	131		120	119		93	91						

QUESTION	BATTALION						COMPANY						PLATOON						SQUAD						YEAR TOTAL
	HRS	FREQ	PROD	HQS	FREQ	PROD	HRS	FREQ	PROD	HQS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HQS	FREQ	PROD	HOURS			
00 OFFENSE OF PULIT-UP AREA	MEAN	6.7	2.	13.4	6.6	3.	19.8	6.2	4.	24.8	5.4	4.	21.6	79.6											
	LOW	6.0	2.	12.0	5.9	3.	17.7	5.6	3.	16.8	4.7	3.	14.1	60.6											
	HIGH	7.4	3.	22.2	7.3	3.	21.9	6.8	4.	27.2	6.2	4.	24.8	96.1											
	N	114	118		124	120			122	130		108	107												
010 STRONG POINT	MEAN	9.5	3.	28.5	9.5	4.	38.0	6.8	4.	27.2	5.8	4.	23.2	116.0											
	LOW	8.2	3.	16.8	8.3	3.	24.9	6.1	4.	24.4	5.0	4.	20.0	85.7											
	HIGH	10.7	3.	32.1	10.6	4.	42.4	7.5	5.	37.5	6.6	4.	26.4	139.4											
	N	110	117		137	137			120	129		94	96												
011 ANTIARMOR AMMUS	MEAN	6.0	3.	18.0	5.8	4.	23.2	6.0	6.	36.0	5.6	5.	28.0	105.2											
	LOW	5.1	3.	15.3	5.2	3.	15.6	5.4	5.	27.0	4.9	4.	19.6	77.5											
	HIGH	6.9	3.	20.7	6.4	4.	25.6	6.6	6.	39.6	6.3	5.	31.5	117.4											
	N	90	75		120	117			134	139		123	109												
012 PASSAGE OF LINES	MEAN	5.3	3.	15.4	4.4	4.	17.6	3.9	4.	15.6	3.5	4.	14.0	63.1											
	LOW	4.4	3.	14.4	3.9	3.	11.7	3.4	4.	13.6	2.9	4.	11.6	51.3											
	HIGH	5.8	3.	17.4	4.9	4.	19.6	4.4	5.	22.0	4.1	4.	16.4	75.4											
	N	135	133		130	114			112	108		90	83												
013 WIVER CROSSING	MEAN	6.4	3.	20.4	5.6	3.	16.8	5.0	3.	15.0	4.6	3.	13.8	66.0											
	LOW	6.2	3.	12.4	5.0	3.	15.0	4.5	3.	13.5	3.9	3.	11.7	52.6											
	HIGH	7.6	3.	22.2	6.2	4.	24.8	5.6	4.	22.4	5.2	4.	20.8	90.2											
	N	130	130		121	120			118	110		96	83												
014 PATROLLING	MEAN	6.3	3.	18.4	6.1	4.	24.4	6.4	5.	37.0	6.7	6.	40.2	116.5											
	LOW	5.1	3.	15.3	5.3	4.	21.2	5.9	4.	23.6	5.9	5.	29.5	89.6											
	HIGH	7.4	3.	22.2	6.8	4.	27.2	7.2	5.	36.0	7.4	6.	46.4	129.8											
	N	72	66		106	107			130	123		125	129												
TOTAL SUM OF PRODUCTS	MEAN			308.0			380.8			417.1			330.3	1472.2											
	LOW			246.8			315.2			326.7			263.5	1152.2											
	HIGH			387.5			468.4			492.7			411.6	1760.6											

TABLE IIB. SET VI ARTFP MISSION TRAINING TIME AND FREQUENCY

FACTORS APPLIED--

95 PER CENT PROFICIENCY
15 PER CENT NOT PRESENT FOR TRAINING
15 PER CENT TRAINER GRADE SUBSTITUTION
15 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	
Q1 MOVEMENT TO CONTACT	MEAN	6.0	2.	12.0	6.3	1.	18.9	5.4	4.	21.6	4.3	4.	17.2	4.3	4.	60.7	
	LOW	5.4	2.	10.8	5.7	3.	17.1	4.9	3.	14.7	3.8	4.	15.2	3.8	4.	57.8	
	HIGH	6.5	2.	13.0	6.9	4.	27.6	5.8	4.	23.2	4.8	4.	19.2	4.8	4.	81.0	
	N	131	127		139	131		138	127		113	111					
Q2 HASTY ATTACK	MEAN	7.4	2.	11.2	5.8	3.	17.4	5.1	4.	20.4	4.1	4.	16.4	4.1	4.	65.4	
	LOW	5.0	2.	10.0	5.2	3.	15.6	4.5	4.	18.0	3.6	4.	14.4	3.6	4.	59.0	
	HIGH	6.1	2.	12.2	6.3	4.	25.2	5.7	4.	22.8	4.6	4.	18.4	4.6	4.	78.6	
	N	131	127		134	132		130	135		99	101					
Q3 DELIBERATE ATTACK	MEAN	7.9	2.	15.8	7.3	3.	21.9	5.8	4.	23.2	5.0	4.	20.0	5.0	4.	80.0	
	LOW	7.2	2.	14.4	6.7	3.	20.1	5.2	4.	20.8	4.4	4.	17.6	4.4	4.	72.9	
	HIGH	9.4	3.	25.8	8.0	4.	32.0	6.4	4.	25.6	5.6	4.	22.4	5.6	4.	105.8	
	N	129	136		133	132		128	133		95	95					
Q4 EXPLOITATION	MEAN	5.7	2.	11.4	5.4	2.	10.8	4.4	2.	8.8	3.7	3.	11.1	3.7	3.	42.1	
	LOW	5.2	1.	5.2	4.9	2.	9.9	3.9	2.	7.8	3.1	2.	6.2	3.1	2.	29.0	
	HIGH	6.3	2.	12.6	6.0	2.	12.0	5.0	3.	15.0	4.4	3.	13.2	4.4	3.	52.4	
	N	136	135		127	124		95	85		65	56					
Q5 NIGHT ATTACK	MEAN	8.1	3.	24.3	7.9	3.	23.7	7.1	4.	28.4	5.9	3.	17.7	5.9	3.	94.1	
	LOW	7.4	2.	14.8	7.2	3.	21.4	6.4	4.	25.6	5.2	3.	15.6	5.2	3.	77.6	
	HIGH	8.7	3.	26.1	8.5	4.	34.0	7.8	4.	31.2	6.6	4.	26.4	6.6	4.	117.7	
	N	130	134		131	129		127	121		104	96					
Q6 DEFENSE	MEAN	12.2	2.	24.4	11.2	3.	33.6	9.7	4.	38.8	6.4	4.	25.6	6.4	4.	122.4	
	LOW	10.9	2.	21.8	10.1	3.	30.3	8.6	4.	34.4	5.7	4.	22.8	5.7	4.	109.3	
	HIGH	13.4	3.	40.2	12.4	4.	49.6	10.8	4.	43.2	7.2	4.	28.8	7.2	4.	161.8	
	N	126	134		130	124		133	139		111	118					
Q7 DELAY	MEAN	9.6	2.	19.2	9.2	4.	36.8	7.6	4.	30.4	5.3	4.	21.2	5.3	4.	107.4	
	LOW	8.5	2.	17.0	8.2	3.	24.6	6.6	4.	28.4	4.6	4.	18.4	4.6	4.	84.4	
	HIGH	10.7	3.	32.1	10.2	4.	40.8	8.6	4.	34.4	6.0	4.	24.0	6.0	4.	131.3	
	N	134	136		132	123		121	126		86	89					
Q8 DISENGAGE	MEAN	6.5	2.	13.0	6.2	3.	18.4	5.4	3.	14.8	4.8	3.	14.4	4.8	3.	42.8	
	LOW	5.4	2.	11.6	5.5	3.	16.5	5.0	3.	15.0	4.1	3.	12.3	4.1	3.	55.4	
	HIGH	7.1	3.	21.3	6.9	4.	20.7	6.2	4.	26.8	5.5	4.	22.0	5.5	4.	88.8	
	N	128	135		126	131		120	119		93	91					

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MNS	FREQ	PRND	MRS	MNS	FREQ	PRND	MRS	MNS	FREQ	PRND	MRS	MNS	FREQ	PRND	MRS	
00 DEFENSE OF BUILT-UP AREA	MEAN	6.7	1.	6.7	6.6	2.	13.2	6.2	6.2	3.	18.6	5.4	5.4	3.	16.2	54.7	
	LOW	5.0	1.	5.0	5.9	2.	11.9	5.6	5.6	2.	11.2	4.7	4.7	2.	9.4	38.9	
	HIGH	7.4	2.	14.8	7.3	2.	14.4	6.8	6.8	3.	20.4	6.2	6.2	3.	18.6	69.4	
	N	114	119		124	120		122	122	130		108	108	107			
010 STRONG POINT	MEAN	9.5	2.	19.0	9.5	3.	28.5	6.8	6.8	3.	20.4	5.8	5.8	3.	17.4	85.7	
	LOW	8.2	1.	8.2	8.3	2.	16.6	6.1	6.1	3.	18.3	5.0	5.0	3.	15.0	58.1	
	HIGH	10.7	2.	21.4	10.6	3.	31.8	7.5	7.5	4.	30.0	6.6	6.6	3.	19.8	103.0	
	N	119	117		137	137		120	120	129		94	94	96			
011 ANTIARMOR AMBUSH	MEAN	6.0	2.	12.0	5.8	3.	17.4	6.0	6.0	4.	24.0	5.6	5.6	4.	22.4	75.8	
	LOW	5.1	2.	10.2	5.2	2.	10.4	5.3	5.3	3.	21.6	4.9	4.9	3.	19.7	55.9	
	HIGH	6.9	2.	13.8	6.6	3.	19.2	6.6	6.6	4.	26.4	6.3	6.3	4.	25.2	84.4	
	N	80	75		120	117		134	134	139		123	123	109			
012 PASSAGE OF LINES	MEAN	5.3	2.	10.6	4.4	3.	13.2	3.9	3.9	3.	11.7	3.5	3.5	3.	10.5	44.0	
	LOW	4.4	2.	9.6	3.9	2.	7.8	3.4	3.4	3.	10.2	2.9	2.9	3.	8.7	34.3	
	HIGH	5.4	2.	11.6	4.9	3.	14.7	4.4	4.4	4.	17.4	4.1	4.1	3.	12.3	56.2	
	N	135	133		130	118		112	112	108		90	90	83			
013 RIVER CROSSING	MEAN	6.4	2.	13.6	5.6	2.	11.2	5.0	5.0	2.	10.0	4.6	4.6	2.	9.2	44.0	
	LOW	6.2	1.	6.2	5.0	2.	10.0	4.5	4.5	2.	9.0	3.9	3.9	2.	7.8	33.0	
	HIGH	7.4	2.	14.8	6.2	3.	14.4	5.6	5.6	3.	16.8	5.2	5.2	3.	15.6	65.8	
	N	130	130		121	120		118	118	110		96	96	83			
014 PATROLLING	MEAN	4.7	2.	12.6	4.1	3.	14.7	6.4	6.4	4.	24.4	6.7	6.7	4.	26.8	84.1	
	LOW	5.1	2.	10.2	5.3	3.	15.9	5.9	5.9	3.	11.7	5.9	5.9	4.	23.6	67.9	
	HIGH	7.4	2.	14.8	6.8	3.	20.4	7.2	7.2	4.	28.8	7.4	7.4	4.	29.6	97.4	
	N	72	64		105	107		130	130	123		125	125	129			
TOTAL SUM OF PRODUCTS	MEAN			205.4			243.5				299.5				266.1	1074.0	
	LOW			156.0			229.1				250.7				201.7	836.5	
	HIGH			274.5			361.2				360.2				295.5	1291.4	

TABLE IIC. SET VI APTF MISSION TRAINING TIME AND FREQUENCY

FACTORS APPLIED--

95 PER CENT PROFICIENCY
 60 PER CENT NOT PRESENT FOR TRAINING
 15 PER CENT TRAINER GRADE SUBSTITUTION
 35 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MHS	FREQ	PROD	MHS	FREQ	PROD	MHS	FREQ	PROD	MHS	FREQ	PROD	MHS	FREQ	PROD	MHS	
Q1 MOVEMENT TO CONTACT MEAN	6.0	A.	48.0	6.3	10.	63.0	5.4	13.	70.2	4.3	13.	55.9					237.1
	LOW	A.	43.2	5.7	10.	57.0	4.9	10.	49.0	3.8	13.	49.4					198.6
	HIGH	A.	52.0	6.9	13.	89.7	5.8	13.	75.4	4.8	15.	72.0					289.1
	N	131	127	139	131		138	127		113	111						
Q2 MASTY ATTACK	5.6	A.	44.8	5.8	10.	58.0	5.1	15.	76.5	4.1	13.	53.3					232.6
	LOW	A.	40.0	5.2	10.	52.0	4.5	13.	58.5	3.6	13.	46.8					197.3
	HIGH	A.	48.8	6.3	13.	81.9	5.7	15.	85.5	4.6	15.	69.0					285.2
	N	131	127	134	132		130	135		99	101						
Q3 DELIBERATE ATTACK	7.4	A.	63.2	7.3	10.	73.0	5.8	13.	75.4	5.0	13.	65.0					276.6
	LOW	A.	57.6	6.7	10.	67.0	5.2	13.	67.6	4.4	13.	57.2					197.4
	HIGH	A.	66.0	8.0	13.	104.0	6.4	15.	96.0	5.6	15.	84.0					370.0
	N	129	136	133	132		128	133		95	95						
Q4 EXPLOITATION	5.7	A.	45.6	5.4	A.	43.2	4.4	A.	35.2	3.7	10.	37.0					161.0
	LOW	5.	26.0	4.9	A.	39.2	3.9	A.	31.2	3.1	8.	24.8					121.2
	HIGH	A.	50.4	6.0	A.	48.0	5.0	10.	50.0	4.4	10.	44.0					192.4
	N	136	135	127	124		95	85		65	56						
Q5 NIGHT ATTACK	8.1	10.	81.0	7.9	10.	79.0	7.1	13.	92.3	5.9	10.	59.0					311.3
	LOW	A.	59.2	7.2	10.	72.0	6.4	13.	83.2	5.2	10.	52.0					266.4
	HIGH	10.	87.0	8.5	13.	110.5	7.8	13.	101.4	6.6	13.	85.8					384.7
	N	130	135	131	129		127	121		104	96						
Q6 DEFENSE	12.2	A.	97.6	11.2	10.	112.0	9.7	15.	145.5	6.4	15.	96.0					451.1
	LOW	A.	87.2	10.1	10.	101.0	8.6	13.	111.8	5.7	13.	74.1					374.1
	HIGH	10.	136.0	12.4	13.	161.2	10.8	15.	162.0	7.2	15.	108.0					565.2
	N	126	134	130	128		133	139		111	118						
Q7 DELAY	9.4	A.	76.8	9.2	13.	119.6	7.4	15.	114.0	5.3	13.	68.9					379.3
	LOW	A.	68.0	8.2	10.	82.0	6.6	13.	85.8	4.6	13.	59.8					295.6
	HIGH	10.	107.0	10.2	13.	132.6	8.6	15.	129.0	6.0	15.	90.0					458.6
	N	133	136	132	120		121	126		86	89						
Q8 DISENGAGE	6.4	A.	52.0	6.2	10.	62.0	5.6	10.	56.0	4.8	10.	48.0					218.0
	LOW	A.	46.4	5.5	10.	55.0	5.0	10.	50.0	4.1	10.	41.0					192.4
	HIGH	10.	71.0	6.9	13.	69.0	6.2	13.	80.6	5.5	13.	71.5					292.1
	N	124	135	126	131		120	119		93	91						

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HOURS	
00 DEFENSE OF HULL-UP AREA	MEAN	6.7	5.	33.5	6.6	8.	52.8	6.2	10.	62.0	5.4	10.	54.0	202.3			
	LOW	5.0	5.	30.0	5.9	8.	47.2	5.5	8.	43.8	4.7	8.	37.6	159.4			
	HIGH	7.4	8.	59.2	7.3	8.	58.4	6.8	10.	68.0	6.2	10.	62.0	247.4			
	N	116	119		124	120		122	130		108	107					
010 STRONG POINT	MEAN	9.5	8.	76.0	9.5	10.	95.0	6.8	10.	68.0	5.8	10.	58.0	297.0			
	LOW	8.2	5.	41.0	8.3	8.	66.4	6.1	10.	61.0	5.0	10.	50.0	218.4			
	HIGH	10.7	8.	85.6	10.6	10.	106.0	7.5	13.	97.5	6.6	10.	66.0	355.1			
	N	119	117		137	137		120	129		94	96					
011 ANTIARMOR AMBUSH	MEAN	6.0	8.	48.0	5.8	10.	58.0	6.0	15.	90.0	5.6	13.	72.8	268.8			
	LOW	5.1	8.	40.8	5.2	8.	41.6	5.4	13.	70.2	4.9	10.	49.0	201.6			
	HIGH	6.9	8.	55.2	6.4	10.	64.0	6.6	15.	96.0	6.3	13.	81.9	300.1			
	N	80	75		120	117		134	139		123	109					
012 PASSAGE OF LINES	MEAN	5.3	8.	42.4	4.4	10.	44.0	3.0	10.	30.0	3.5	10.	35.0	160.4			
	LOW	4.4	8.	38.4	3.9	8.	31.2	3.4	10.	34.0	2.9	10.	29.0	132.6			
	HIGH	5.8	8.	46.4	4.9	10.	49.0	4.4	13.	57.2	4.1	10.	41.0	193.6			
	N	135	133		130	118		112	108		90	83					
013 RIVER CROSSING	MEAN	6.8	8.	54.4	5.6	8.	44.8	5.0	8.	40.0	4.6	8.	36.8	176.0			
	LOW	5.2	5.	31.0	5.0	8.	40.0	4.5	8.	36.0	3.9	8.	31.2	138.2			
	HIGH	7.4	8.	59.2	6.2	10.	62.0	5.6	10.	56.0	5.2	10.	52.0	229.2			
	N	130	140		121	120		114	110		96	83					
014 PATROLLING	MEAN	6.1	8.	50.4	6.1	10.	61.0	6.6	13.	85.8	6.7	15.	100.5	297.7			
	LOW	5.1	8.	40.8	5.3	10.	53.0	5.9	10.	52.0	5.9	13.	76.7	229.5			
	HIGH	7.4	8.	59.2	6.8	10.	68.0	7.2	13.	93.6	7.4	15.	111.0	331.8			
	N	72	66		105	107		130	123		125	129					
TOTAL SUM OF PRODUCTS	MEAN			113.7			965.4			1049.9			840.2	3669.2			
	LOW			849.6			809.4			842.1			678.6	2974.9			
	HIGH			1001.0			1204.3			1251.2			1036.2	4694.7			

TABLE IID. SFT VI AIRTEL MISSION TRAINING TIME AND FREQUENCY

FACTORS APPLIED-

95 PER CENT PROFICIENCY
 25 PER CENT NOT PRESENT FOR TRAINING
 15 PER CENT TRAINER GRADE SUBSTITUTION
 20 PER CENT CHANGE IN DUTY POSITION

OUTPOST	BATTALION			COMPANY			PLATOON			SQUAD			YEAR TOTAL
	HMS	FRFQ	PROB	HRS	FMFO	PROB	HRS	FPEO	PROB	HRS	FREQ	PROB	
01 MOVEMENT TO CONTACT	MEAN	6.0	2.	12.0	6.3	3.	18.9	4.	21.6	4.1	4.	17.2	69.7
	LOW	5.4	2.	10.8	5.7	3.	17.1	3.	14.7	3.8	4.	15.2	57.8
	HIGH	6.6	2.	13.0	6.9	4.	27.6	4.	23.2	4.8	4.	19.2	83.0
	N	131	127		139	131		138	127	113	111		
02 MASTY ATTACK	MEAN	5.4	2.	11.2	5.8	3.	17.4	4.	20.4	4.1	4.	16.4	65.4
	LOW	5.0	2.	10.0	5.2	3.	15.6	4.	19.0	3.6	4.	14.4	58.0
	HIGH	6.1	2.	12.2	6.3	4.	25.2	4.	22.8	4.6	4.	18.4	78.6
	N	131	127		134	132		130	135	99	101		
03 DELIBERATE ATTACK	MEAN	7.9	2.	15.8	7.3	3.	21.0	4.	23.2	5.0	4.	20.0	80.9
	LOW	7.2	2.	14.4	6.7	3.	20.1	4.	20.8	4.4	4.	17.6	72.9
	HIGH	8.4	2.	16.8	8.0	4.	32.0	4.	25.6	5.6	4.	22.4	104.8
	N	129	136		133	132		128	133	95	95		
04 EXPLOITATION	MEAN	5.7	2.	11.4	5.4	2.	10.8	4.4	8.8	3.7	3.	11.1	42.1
	LOW	5.2	1.	5.2	4.9	2.	9.8	3.9	7.8	3.1	2.	6.2	29.0
	HIGH	6.3	2.	12.6	6.0	2.	12.0	5.0	15.0	4.4	3.	13.2	52.8
	N	136	135		127	126		95	85	65	56		
05 NIGHT ATTACK	MEAN	8.1	3.	24.3	7.9	3.	23.7	7.1	28.4	5.9	3.	17.7	98.1
	LOW	7.4	2.	14.8	7.2	3.	21.5	6.4	25.6	5.2	3.	15.6	77.6
	HIGH	8.7	3.	26.1	8.5	4.	34.0	7.8	31.2	6.6	4.	26.4	117.7
	N	133	135		131	129		127	121	104	96		
06 DEFENSE	MEAN	12.2	2.	24.4	11.2	3.	33.4	9.7	38.8	6.4	4.	25.6	122.4
	LOW	10.9	2.	21.8	10.1	3.	30.3	8.4	34.4	5.7	4.	22.8	109.3
	HIGH	13.4	3.	40.2	12.4	4.	49.4	10.8	43.2	7.2	4.	28.8	161.8
	N	126	134		130	128		133	139	111	118		
07 DELAY	MEAN	9.4	2.	19.2	9.2	4.	36.8	7.6	30.4	5.3	4.	21.2	107.6
	LOW	8.5	2.	17.0	8.2	3.	24.4	6.6	26.4	4.6	4.	18.4	86.4
	HIGH	10.7	3.	32.1	10.2	4.	40.8	8.6	34.4	6.0	4.	24.0	131.3
	N	133	134		132	129		121	126	86	89		
08 DISENGAGE	MEAN	6.7	2.	13.0	6.2	4.	14.6	5.6	14.8	4.8	3.	14.4	62.8
	LOW	5.4	2.	11.6	5.5	3.	16.5	5.0	15.0	4.1	3.	12.3	55.4
	HIGH	7.1	3.	21.3	6.9	3.	20.7	6.2	24.8	5.5	4.	22.0	88.8
	N	124	135		126	131		120	114	93	91		

SECTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MRS	EFEO	PRON	MRS	EFEO	PRON	MRS	EFEO	PRON	MRS	EFEO	PRON	MRS	EFEO	PRON	MRS	
00 DEFENCE OF BUILT-UP AREA	MEAN	4.7	1.	4.7	4.6	2.	13.2	4.2	3.	18.6	5.4	3.	16.2	54.7			
	LOW	5.0	1.	5.0	5.0	2.	11.4	5.5	2.	11.2	4.7	2.	9.4	38.4			
	HIGH	7.6	2.	14.4	7.3	2.	16.4	6.8	3.	20.4	6.2	3.	19.6	68.4			
	N	114	114	124	124	120											
010 STRONG POINT	MEAN	9.5	2.	19.0	9.5	3.	28.5	6.4	3.	20.4	5.8	3.	17.4	85.1			
	LOW	4.2	1.	8.2	4.3	2.	16.5	6.1	3.	18.3	5.0	3.	15.0	58.1			
	HIGH	10.7	2.	21.4	10.6	3.	31.8	7.5	4.	30.0	6.6	3.	19.8	107.0			
	N	110	117	137	137												
011 ANTIARMOR ARMOR	MEAN	6.0	2.	12.0	5.8	3.	17.4	6.0	4.	24.0	5.6	4.	22.4	75.8			
	LOW	5.1	2.	10.2	5.2	2.	10.4	5.4	4.	21.6	4.9	3.	14.7	56.9			
	HIGH	6.2	2.	13.8	6.6	3.	19.2	6.8	4.	26.4	6.3	4.	25.2	84.4			
	N	80	74	120	120	117											
012 PASSAGE OF LINES	MEAN	5.3	2.	10.6	4.4	3.	13.2	3.9	3.	11.7	3.5	3.	10.5	44.0			
	LOW	4.4	2.	9.6	3.9	2.	7.8	3.4	3.	10.2	2.9	3.	8.7	35.3			
	HIGH	7.4	2.	11.6	4.9	3.	14.7	4.4	4.	17.6	4.1	3.	12.3	54.2			
	N	135	133	130	130	116											
013 GIVE CROSSING	MEAN	6.4	2.	13.6	5.6	2.	11.2	5.0	2.	10.0	4.6	2.	9.2	44.0			
	LOW	5.2	1.	6.2	5.0	2.	10.0	4.5	2.	9.0	3.9	2.	7.8	33.0			
	HIGH	7.6	2.	18.4	6.2	3.	18.4	5.6	3.	14.8	5.2	3.	15.6	65.8			
	N	130	130	121	121	120											
014 PATROLLING	MEAN	6.3	2.	12.6	6.1	3.	14.3	6.6	4.	24.4	6.7	4.	26.8	84.1			
	LOW	5.1	2.	10.2	5.3	3.	15.7	5.9	3.	17.2	5.9	4.	23.6	67.4			
	HIGH	7.6	2.	14.4	6.8	3.	20.4	7.2	4.	28.8	7.4	4.	29.6	97.4			
	N	72	66	105	105	107											
TOTAL SUM OF PRODUCTS	MEAN	205.8		203.5	203.5		299.5	246.1		299.5	246.1		1074.9				
	LOW	155.0		224.1	224.1		250.7	201.7		250.7	201.7		836.5				
	HIGH	274.5		361.2	361.2		360.2	295.5		360.2	295.5		1204.4				

TABLE IIE. SFT VI ARTFP MISSION TRAINING TIME AND FREQUENCY

FACTORS APPLIED:-
 95 PER CENT PROFICIENCY
 25 PER CENT NOT PRESENT FOR TRAINING
 15 PER CENT TRAINER GRADE SUBSTITUTION
 10 PER CENT CHANGE IN DUTY POSITION

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR	
	MHS	FRFO	PHON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	FRFO	PRON	MRS	TOTAL	HOURS
Q1 MOVEMENT TO CONTACT	MEAN	2.	12.0	6.3	2.	12.6	5.4	3.	16.2	4.3	3.	12.9	3.	11.4	3.	12.9	53.7	
	LOW	5.4	2.	10.8	5.7	2.	11.4	4.9	2.	9.8	3.8	3.	11.4	3.	11.4	43.4		
	HIGH	6.5	2.	13.0	6.9	3.	20.7	5.8	3.	17.4	4.8	4.	19.2	4.	19.2	70.3		
	N	131	127	139	131		138	127		113	111							
Q2 HASTY ATTACK	MEAN	5.6	2.	11.2	5.8	2.	11.6	5.1	4.	20.4	4.1	3.	12.3	3.	12.3	55.5		
	LOW	5.0	2.	10.0	5.2	2.	10.4	4.5	3.	13.5	3.6	3.	10.8	3.	10.8	44.7		
	HIGH	6.1	2.	12.2	6.3	3.	18.9	5.7	4.	22.8	4.6	4.	18.4	4.	18.4	72.3		
	N	131	127	134	132		130	130		99	101							
Q3 OBLIQUE/ATF ATTACK	MEAN	7.9	2.	15.8	7.3	2.	14.6	5.8	3.	17.4	5.0	3.	15.0	3.	15.0	62.8		
	LOW	7.2	2.	14.4	6.7	2.	13.4	5.2	3.	15.6	4.4	3.	13.2	3.	13.2	56.6		
	HIGH	8.6	2.	17.2	8.0	3.	24.0	6.4	4.	25.6	5.6	4.	22.4	4.	22.4	89.2		
	N	124	136	133	132		128	128		95	95							
Q4 EXPLOITATION	MEAN	5.7	2.	11.4	5.4	2.	10.8	4.4	2.	8.8	3.7	2.	7.4	2.	7.4	38.4		
	LOW	5.2	1.	5.2	4.9	2.	9.8	3.9	2.	7.8	3.1	2.	6.2	2.	6.2	29.0		
	HIGH	6.3	2.	12.6	6.0	2.	12.0	5.0	2.	10.0	4.4	2.	8.8	2.	8.8	43.4		
	N	136	135	127	124		95	95		85	65		56					
Q5 NIGHT ATTACK	MEAN	8.1	2.	14.2	7.9	2.	15.8	7.1	3.	21.3	5.9	2.	11.8	2.	11.8	65.1		
	LOW	7.4	2.	14.8	7.2	2.	14.4	6.4	3.	19.2	5.2	2.	10.4	2.	10.4	59.8		
	HIGH	8.7	2.	17.4	8.5	3.	25.5	7.8	3.	23.4	6.6	3.	19.8	3.	19.8	86.1		
	N	130	135	131	129		127	127		121	104		96					
Q6 OFFENSE	MEAN	12.2	2.	24.4	11.2	2.	22.4	9.7	4.	38.8	6.4	4.	25.6	4.	25.6	111.2		
	LOW	10.9	2.	21.8	10.1	2.	20.2	8.6	3.	25.8	5.7	3.	17.1	3.	17.1	86.9		
	HIGH	13.4	2.	26.8	12.4	3.	37.2	10.8	4.	43.2	7.2	4.	28.8	4.	28.8	136.0		
	N	126	134	130	124		133	133		139	111		118					
Q7 DEFAY	MEAN	9.4	2.	19.2	9.2	3.	27.6	7.6	4.	30.4	5.3	3.	15.9	3.	15.9	93.1		
	LOW	8.5	2.	17.0	8.2	2.	16.4	6.6	3.	19.8	4.6	3.	13.8	3.	13.8	67.0		
	HIGH	10.7	2.	21.4	10.2	3.	30.4	8.6	4.	34.4	6.0	4.	24.0	4.	24.0	110.4		
	N	133	134	132	129		121	121		126	86		89					
Q8 DISCHARGE	MEAN	6.5	2.	13.0	6.2	2.	12.4	5.6	2.	11.2	4.8	2.	9.6	2.	9.6	44.2		
	LOW	5.4	2.	11.6	5.5	2.	11.0	4.2	2.	10.0	4.1	2.	8.2	2.	8.2	40.8		
	HIGH	7.1	2.	14.2	6.9	2.	13.8	6.2	3.	18.6	5.5	3.	16.5	3.	16.5	63.1		
	N	124	135	126	131		120	120		119	93		91					

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL	
	MHS	FREQ	PROD	MPS	FREQ	PROD	MPS	FREQ	PROD	MHS	FREQ	PROD	MPS	FREQ	PROD	HOURS	TOTAL	
09 DEFENSE OF QUILL-UP AREA	MEAN	6.7	1.	6.7	6.6	2.	13.2	6.2	2.	12.4	5.4	2.	10.8	43.1				
	LOW	5.0	1.	6.0	5.9	2.	11.9	5.6	2.	11.2	5.1	2.	9.4	35.8				
	HIGH	7.4	2.	14.8	7.3	2.	14.6	6.8	2.	13.6	6.2	2.	12.4	55.4				
	N	115	114		124	120				108	107							
010 STRONG POINT	MEAN	9.5	2.	19.0	9.5	2.	19.0	6.9	2.	13.6	5.8	2.	11.6	63.2				
	LOW	8.2	1.	8.2	8.3	2.	16.6	6.1	2.	12.2	5.0	2.	10.0	42.0				
	HIGH	10.7	2.	21.4	10.6	2.	21.2	7.5	3.	22.5	6.6	2.	13.2	78.1				
	N	119	117		137	137				94	96							
011 ANTIARMOR AMBUSH	MEAN	6.0	2.	12.0	5.8	2.	11.6	6.0	4.	24.0	5.6	3.	16.8	64.4				
	LOW	5.1	2.	10.2	5.2	2.	10.4	5.4	3.	16.2	4.9	2.	9.8	46.6				
	HIGH	6.9	2.	13.8	6.4	2.	12.9	6.6	4.	26.4	6.3	3.	18.9	71.0				
	N	80	75		120	117				134	139							
012 PASSAGE OF LINES	MEAN	5.3	2.	10.6	4.4	2.	8.8	3.9	2.	7.8	3.5	2.	7.0	34.2				
	LOW	4.3	2.	9.6	3.9	2.	7.8	3.4	2.	6.8	2.9	2.	5.8	30.0				
	HIGH	5.4	2.	11.6	4.9	2.	9.8	4.4	3.	13.2	4.1	2.	8.2	42.8				
	N	135	133		130	118				108	83							
013 OVER CROSSING	MEAN	6.8	2.	13.6	5.6	2.	11.2	5.0	2.	10.0	4.6	2.	9.2	44.0				
	LOW	6.2	1.	6.2	5.0	2.	10.0	4.5	2.	9.0	3.9	2.	7.8	33.0				
	HIGH	7.4	2.	18.8	6.2	2.	12.4	5.4	2.	11.2	5.2	2.	10.4	48.8				
	N	130	130		121	120				110	96							
014 PATROLLING	MEAN	6.3	2.	12.6	6.1	2.	12.2	6.6	3.	19.8	6.7	4.	26.8	71.4				
	LOW	5.1	2.	10.2	5.3	2.	10.6	5.9	2.	11.8	5.9	3.	17.7	50.1				
	HIGH	7.4	2.	18.8	6.8	2.	13.4	7.2	3.	21.6	7.4	4.	29.6	79.8				
	N	72	66		105	107				123	125							
TOTAL SUM OF PRODUCTS	MEAN			147.7			203.8			252.1			192.7	846.3				
	LOW			158.0			174.2			188.7			151.6	670.5				
	HIGH			224.0			267.1			303.9			250.4	1043.6				

TABLE IIF. SET VI ARTFP MISSION TRAINING TIME AND FREQUENCY

FACTORS APPLIED-

95 PER CENT PROFICIENCY
25 PER CENT NOT PRESENT FOR TRAINING
25 PER CENT TRAINER GRADE SUBSTITUTION
25 PER CENT CHANGE IN DUTY POSITION

OBJECTIVE	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MRS	FFFO	PRDD	MRS	FFFO	PRDD	MRS	FFFO	PRDD	MRS	FFFO	PRDD	MRS	FFFO	PRDD	MRS	
01 MOVEMENT TO CONTACT	MEAN	9.4	3.	24.9	8.8	4.	34.2	7.5	5.	37.5	6.0	5.	30.0	5.	30.0	5.	127.6
	LOW	7.0	3.	22.5	7.9	4.	31.6	6.8	4.	27.2	5.3	5.	26.5	5.	26.5	5.	107.8
	HIGH	9.0	3.	27.0	9.6	5.	49.0	8.1	5.	40.5	6.7	6.	40.2	6.	40.2	6.	155.7
	N	131	127	139	131			138	127				113	111			
02 HASTY ATTACK	MEAN	7.4	3.	23.4	8.1	4.	32.4	7.1	6.	42.6	5.7	5.	28.5	5.	28.5	5.	126.0
	LOW	6.9	3.	20.7	7.2	4.	28.8	6.3	5.	31.5	5.0	5.	25.0	5.	25.0	5.	106.0
	HIGH	9.5	3.	25.5	8.8	5.	44.0	7.9	6.	47.4	6.4	6.	38.4	6.	38.4	6.	155.3
	N	131	127	134	132			130	135				99	101			
03 DELIBERATE ATTACK	MEAN	11.0	3.	31.0	10.1	4.	40.4	8.1	5.	40.5	6.9	5.	34.5	5.	34.5	5.	148.4
	LOW	10.0	3.	30.0	9.3	4.	37.2	7.2	5.	36.0	6.1	5.	30.5	5.	30.5	5.	133.7
	HIGH	12.0	4.	44.0	11.1	5.	55.5	8.9	6.	53.4	7.8	6.	46.8	6.	46.8	6.	203.7
	N	129	136	133	132			128	133				95	95			
04 EXPLOITATION	MEAN	7.9	3.	23.7	7.5	3.	22.5	6.1	3.	18.3	5.1	4.	20.4	4.	20.4	4.	84.9
	LOW	7.2	2.	14.4	6.8	3.	20.4	5.4	3.	16.2	4.3	3.	12.9	3.	12.9	3.	63.9
	HIGH	8.4	3.	26.4	8.3	3.	24.9	6.9	4.	27.6	6.1	4.	24.4	4.	24.4	4.	103.3
	N	136	135	127	124			95	85				65	56			
05 NIGHT ATTACK	MEAN	11.3	4.	45.2	11.0	4.	44.0	9.9	5.	40.5	8.2	4.	32.8	4.	32.8	4.	171.5
	LOW	10.3	3.	30.9	10.0	4.	40.0	8.9	5.	44.5	7.2	4.	28.8	4.	28.8	4.	144.2
	HIGH	12.1	4.	49.4	11.8	5.	50.0	10.8	5.	54.0	9.2	5.	46.0	5.	46.0	5.	207.4
	N	130	135	131	120			127	121				104	96			
06 DEFENSE	MEAN	17.0	3.	51.0	15.6	4.	62.4	13.5	6.	81.0	8.9	6.	53.4	6.	53.4	6.	247.8
	LOW	15.2	3.	45.6	14.0	4.	56.0	12.0	5.	60.0	7.9	5.	39.5	5.	39.5	5.	201.1
	HIGH	19.5	4.	74.4	17.2	5.	86.0	15.0	6.	90.0	10.0	6.	60.0	6.	60.0	6.	310.4
	N	125	134	130	124			133	139				111	118			
07 DAY	MEAN	13.4	3.	39.9	12.8	5.	44.0	10.6	6.	61.6	7.4	5.	37.0	5.	37.0	5.	204.5
	LOW	11.9	3.	35.4	11.4	4.	45.5	9.2	5.	44.0	6.4	5.	32.0	5.	32.0	5.	158.0
	HIGH	14.5	4.	50.6	14.2	5.	71.0	12.0	6.	72.0	8.3	6.	49.8	6.	49.8	6.	252.4
	N	113	126	132	120			121	126				86	89			
08 DISENGAGE	MEAN	9.0	3.	27.0	8.6	4.	34.4	7.8	4.	31.2	6.7	4.	26.8	4.	26.8	4.	119.4
	LOW	8.1	3.	24.3	7.6	4.	30.4	6.9	4.	27.6	5.7	4.	22.8	4.	22.8	4.	105.1
	HIGH	9.9	4.	32.6	9.6	4.	34.4	8.6	5.	43.0	7.6	5.	38.0	5.	38.0	5.	159.0
	N	124	135	126	131			120	119				93	91			

SUBSTATION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR TOTAL
	MHS	FREQ	PRD	MHS	FREQ	PRD	MHS	FREQ	PRD	MHS	FREQ	PRD	MHS	FREQ	PRD	MHS	
010 DEFENCE OF BUILT-UP AREA	MEAN	9.3	2.	14.6	9.2	3.	27.4	8.4	4.	34.4	7.5	4.	30.0	7.5	4.	110.4	133.4
	LOW	8.1	2.	16.6	9.2	3.	29.6	7.4	3.	23.4	6.5	3.	19.5	6.5	3.	84.1	
	HIGH	10.1	3.	10.9	10.1	4.	30.3	9.5	4.	34.0	8.6	4.	34.4	8.6	4.	133.4	
010 STRONG POINT	MEAN	13.2	3.	30.6	13.2	4.	52.9	9.5	4.	30.0	8.1	4.	32.4	8.1	4.	162.4	192.3
	LOW	11.4	2.	22.8	11.5	3.	34.5	8.5	4.	34.0	6.9	4.	27.6	6.9	4.	118.9	
	HIGH	14.9	3.	44.7	14.7	4.	59.4	10.4	5.	52.0	9.2	4.	36.8	9.2	4.	192.3	
011 ANTIARMOR AMBUSH	MEAN	4.3	3.	24.9	4.1	4.	32.4	8.3	6.	49.8	7.8	5.	39.0	7.8	5.	146.1	163.4
	LOW	3.1	3.	21.3	7.2	3.	21.6	7.5	5.	37.5	6.8	4.	27.2	6.8	4.	102.6	
	HIGH	9.4	3.	28.8	8.9	4.	35.6	9.2	6.	55.2	8.8	5.	44.0	8.8	5.	163.4	
012 PASSAGE OF LINES	MEAN	7.4	3.	22.2	6.1	4.	24.4	5.4	4.	21.6	4.9	4.	19.6	4.9	4.	87.9	104.8
	LOW	6.7	3.	20.1	5.4	3.	16.2	4.7	4.	18.8	4.0	4.	16.0	4.0	4.	71.1	
	HIGH	8.1	3.	24.3	6.8	4.	27.2	6.1	5.	30.5	5.7	4.	22.8	5.7	4.	104.8	
013 RIVER CROSSING	MEAN	9.5	3.	28.5	7.8	3.	23.4	6.9	3.	20.7	6.4	3.	19.2	6.4	3.	91.8	125.3
	LOW	8.5	2.	17.2	5.9	3.	20.7	6.3	3.	15.9	5.4	3.	16.2	5.4	3.	73.0	
	HIGH	10.1	3.	40.9	8.6	4.	34.4	7.8	4.	31.2	7.2	4.	28.8	7.2	4.	125.3	
014 PATROLLING	MEAN	8.4	3.	26.4	4.5	4.	34.0	9.2	5.	46.0	9.3	6.	55.8	9.3	6.	162.2	180.7
	LOW	7.1	3.	21.3	7.4	4.	29.5	8.2	4.	32.8	8.2	5.	41.0	8.2	5.	124.7	
	HIGH	10.3	3.	30.9	9.5	4.	34.0	10.0	5.	50.0	10.3	6.	61.8	10.3	6.	180.7	
TOTAL SUM OF PRODUCTS	MEAN			474.3			529.9			574.7			459.4			1902.3	2447.5
	LOW			343.1			437.2			454.4			365.5			1600.2	
	HIGH			530.6			651.1			694.8			572.2			2447.5	

TABLE IIG. SET VI ARTFP MISSION TRAINING TIME AND FREQUENCY

US PER CENT PROFICIENCY
25 PER CENT NOT PRESENT FOR TRAINING
40 PER CENT TRAINER GRADE SUBSTITUTION
15 PER CENT CHANGE IN DUTY POSITION

FACTORS APPLIED-

QUESTION	BATTALION			COMPANY			PLATOON			SQUAD			YEAR TOTAL
	HRS	FRQ	PROD	HRS	FRQ	PROD	HRS	FRQ	PROD	HRS	FRQ	PROD	HOURS
01 MOVEMENT TO CONTACT	MEAN	13.4	3.	41.7	14.6	4.	58.4	12.5	5.	62.5	9.9	5.	49.5
	LOW	12.5	3.	37.5	13.2	4.	52.8	11.3	4.	45.2	8.8	5.	179.5
	HIGH	15.0	3.	45.0	15.9	5.	74.5	13.4	5.	67.0	11.1	6.	258.1
	N	131	127	139	131	131	139	127	131	133	111		
02 HASTY ATTACK	MEAN	12.9	3.	38.7	13.4	4.	53.4	11.8	6.	70.8	9.5	5.	210.4
	LOW	11.5	3.	34.5	12.0	4.	48.0	10.4	5.	52.0	8.3	5.	176.0
	HIGH	14.1	3.	42.3	14.6	5.	73.0	13.2	6.	79.2	10.6	6.	254.1
	N	131	127	134	132	132	134	130	135	99	101		
03 DELIBERATE ATTACK	MEAN	18.2	3.	54.6	16.9	4.	67.6	13.4	5.	67.0	11.5	5.	244.7
	LOW	16.6	3.	49.8	15.5	4.	62.0	12.0	5.	60.0	10.2	5.	222.4
	HIGH	19.9	4.	79.6	18.5	5.	92.5	14.8	6.	88.8	12.9	6.	338.9
	N	129	136	133	132	132	133	128	133	95	95		
04 EXPLOITATION	MEAN	13.2	3.	39.6	12.5	3.	37.5	10.2	3.	30.6	8.5	4.	141.7
	LOW	12.0	2.	24.0	11.3	3.	33.9	9.0	3.	27.0	7.2	3.	106.5
	HIGH	14.4	3.	43.8	13.9	3.	41.7	11.5	4.	46.0	10.2	4.	172.3
	N	136	135	127	124	124	127	95	85	65	56		
05 NIGHT ATTACK	MEAN	18.7	4.	74.8	18.2	4.	72.8	16.4	5.	82.0	13.6	4.	284.0
	LOW	17.1	3.	51.3	16.6	4.	65.4	14.8	5.	74.0	12.0	4.	239.7
	HIGH	20.1	4.	80.4	19.6	5.	98.0	18.0	5.	90.0	15.2	5.	344.4
	N	131	135	131	129	129	131	127	121	104	96		
06 DEFENSE	MEAN	28.2	3.	84.6	25.9	4.	103.6	22.4	6.	134.4	14.8	6.	411.4
	LOW	25.2	3.	75.6	23.3	4.	93.2	19.9	5.	99.5	13.2	5.	334.3
	HIGH	31.0	4.	124.0	28.6	5.	143.0	24.0	6.	149.4	16.6	6.	514.0
	N	126	134	130	128	128	133	133	139	111	118		
07 DELAY	MEAN	22.2	3.	66.6	21.3	5.	106.5	17.4	6.	105.6	12.2	5.	339.7
	LOW	19.6	3.	58.8	18.9	4.	75.6	15.2	5.	76.0	10.6	5.	263.4
	HIGH	24.7	4.	98.8	23.6	5.	119.0	19.9	6.	119.4	13.9	6.	419.4
	N	133	136	132	129	129	132	121	126	86	89		
08 DISENGAGE	MEAN	15.0	3.	45.0	14.3	4.	57.2	12.9	4.	51.6	11.1	4.	198.2
	LOW	13.4	3.	40.2	12.7	4.	50.9	11.5	4.	46.0	9.5	4.	175.0
	HIGH	16.4	4.	65.6	15.9	4.	63.6	14.3	5.	71.5	12.7	5.	264.2
	N	124	125	126	131	131	126	120	119	93	91		

QUESTION	BATTALION				COMPANY				PLATOON				SQUAD				YEAR	
	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	FREQ	PROD	HRS	TOTAL	MOHPS
Q9 DEFENSE OF BUILT-UP AREA	MEAN	15.5	2.	31.0	15.2	3.	45.6	14.3	4.	57.2	12.5	4.	50.0	183.4				
	LOW	13.9	2.	27.8	13.5	3.	40.8	12.9	3.	38.7	10.9	3.	32.7	140.0				
	HIGH	17.1	3.	51.3	16.9	3.	50.7	15.7	4.	62.8	14.3	4.	57.2	222.0				
	N	116	119		124	120		122	130		108	107						
Q10 STRONG POINT	MEAN	21.9	3.	65.7	21.9	4.	87.6	15.7	4.	62.8	13.4	4.	53.6	269.7				
	LOW	18.9	2.	37.8	19.2	3.	57.5	14.1	4.	56.4	11.5	4.	46.0	197.5				
	HIGH	24.7	3.	74.1	24.5	4.	98.0	17.3	5.	86.5	15.2	4.	60.8	319.4				
	N	119	117		137	137		120	129		94	96						
Q11 ANTIARMOR AMBUSH	MEAN	13.9	3.	41.7	13.4	4.	53.6	13.9	6.	83.4	12.9	5.	64.5	243.2				
	LOW	11.8	3.	35.4	12.0	3.	36.0	12.5	5.	62.5	11.3	4.	45.2	179.1				
	HIGH	15.9	3.	47.7	14.8	4.	59.2	15.2	6.	91.2	14.6	5.	73.0	271.1				
	N	80	75		120	117		134	139		123	109						
Q12 PASSAGE OF LINES	MEAN	12.2	3.	36.6	10.2	4.	40.8	9.0	4.	36.0	8.1	4.	32.4	145.4				
	LOW	11.1	3.	33.3	9.0	3.	27.0	7.9	4.	31.6	6.7	4.	26.8	118.7				
	HIGH	13.4	3.	40.2	11.3	4.	45.2	10.2	5.	51.0	9.5	4.	38.0	174.4				
	N	135	133		130	114		112	108		90	83						
Q13 OVER CROSSING	MEAN	15.7	3.	47.1	12.9	3.	38.7	11.5	3.	34.5	10.6	3.	31.8	152.1				
	LOW	14.1	2.	28.6	11.5	3.	34.5	10.4	3.	31.2	9.0	3.	27.0	121.1				
	HIGH	17.1	3.	51.3	14.3	4.	57.2	12.9	4.	51.6	12.0	4.	48.0	204.1				
	N	130	130		121	120		119	110		96	83						
Q14 PATROLLING	MEAN	14.6	3.	43.8	14.1	4.	56.4	15.2	5.	76.0	15.5	6.	93.0	269.2				
	LOW	11.8	3.	35.4	12.2	4.	49.8	13.6	4.	54.4	13.6	5.	68.0	206.6				
	HIGH	17.1	3.	51.3	15.7	4.	62.8	16.6	5.	83.0	17.1	6.	102.6	299.7				
	N	72	66		105	107		130	123		125	129						
TOTAL SUM OF PRODUCTS	MEAN			711.5			879.0			954.4			762.4	3308.2				
	LOW			570.0			727.4			754.5			608.0	2660.7				
	HIGH			895.4			1082.4			1137.4			950.5	4045.7				

TABLE IIIA. SET VII SOLDIER'S MANUAL TASKS--TIME AND FREQUENCIES

A. BATTLE POSITION	FACTORS APPLIED--	95 PER CENT PROFICIENCY 25 PER CENT NOT PRESENT FOR TRAINING 15 PER CENT TRAINER GRADER SUBSTITUTION 35 PER CENT CHANGE IN DUTY POSITION			YEAR	
		HOURS		FREQUENCY	TOTAL	HOURS
012 CLAYMOP	MEAN	1.9		5.		9.5
	LOW	1.7		5.		8.5
	HIGH	2.0		6.		12.0
	N	143		184		
013 AD/AT WINES	MEAN	2.6		4.		10.4
	LOW	2.5		4.		10.0
	HIGH	2.8		4.		11.2
	N	150		142		
048 HOSTILE AIRCRAFT	MEAN	1.7		5.		8.5
	LOW	1.6		5.		8.0
	HIGH	1.9		6.		11.4
	N	156		163		
050 AIRCRAFT IDENTIFICATION	MEAN	2.0		6.		12.0
	LOW	1.8		5.		9.0
	HIGH	2.2		7.		15.4
	N	156		153		
049 DEMOLITION TRAINING	MEAN	2.5		3.		7.5
	LOW	2.3		3.		6.9
	HIGH	2.7		3.		8.1
	N	147		153		
TOTAL SUM OF PRODUCTS						
	MEAN			47.9		
	LOW			42.4		
	HIGH			58.1		

B. COMMUNICATIONS				HOURS	FREQUENCY	YEAR TOTAL HOURS
VIA RADIO PROCEDURES				MEAN	0.	14.0
				LOW	7.	12.6
				HIGH	9.	18.9
				N	162	
VIA COMMO EQUIPMENT				MEAN	0.	20.0
				LOW	7.	14.0
				HIGH	9.	26.1
				N	149	
VIA CABLE				MEAN	7.	15.4
				LOW	7.	14.0
				HIGH	8.	19.2
				N	162	
TOTAL SUM OF PRODUCTS				MEAN	52.2	
				LOW	43.4	
				HIGH	64.2	

C. FIRE + MANEUVER

			HOURS	FREQUENCY	YEAR TOTAL HOURS
007 IND MOVEMENT SKILLS	MEAN		3.9	8.	31.2
	LOW		3.5	7.	24.5
	HIGH		4.3	9.	30.7
	N		116	117	
008 IND MOVEMENT SKILLS (MORTAR)	MEAN		2.7	7.	18.9
	LOW		2.4	6.	14.4
	HIGH		3.0	7.	21.0
	N		98	112	
009 VEHICLE POSITIONING	MEAN		2.2	7.	15.4
	LOW		2.0	6.	12.0
	HIGH		2.4	7.	16.0
	N		152	157	
010 VEHICLE MOVEMENT	MEAN		3.3	7.	23.1
	LOW		3.0	6.	18.0
	HIGH		3.7	8.	29.6
	N		160	153	
013 TANK EXTERNAL PHONE	MEAN		1.0	4.	4.0
	LOW		.9	4.	3.6
	HIGH		1.1	5.	5.5
	N		114	115	
045 ENEMY MINES	MEAN		2.3	5.	11.5
	LOW		2.2	5.	11.0
	HIGH		2.5	6.	15.0
	N		153	160	
TOTAL SUM OF PRODUCTS	MEAN			104.1	
	LOW			83.5	
	HIGH			126.6	

D. M. V.		HOURS			FREQUENCY	YEAR	
		MEAN	LOW	HIGH		TOTAL	HOURS
	020 M113A1 OPERATOR TRAINING	2.8 2.5 3.1 N 138	11. 9. 14. 144	30.8 22.5 43.4			
	021 1/4 TON VEHICLE TRAINING	2.2 2.0 2.4 N 148	8. 7. 9. 157	17.6 14.0 21.6			
	023 AUXILIARY GENERATOR -TRACKED VEHICLE	2.0 1.9 2.2 N 133	7. 6. 8. 138	14.0 11.4 17.6			
	029 DELIVER DUTIES	5.5 4.7 6.3 N 112	18. 15. 21. 112	99.0 70.5 132.3			
	044 FIRE SAFETY	1.1 1.0 1.2 N 116	4. 3. 4. 103	4.4 3.0 4.8			
	053 VEHICLE TRNG-1/4TON	2.5 2.3 2.7 N 153	3. 3. 4. 144	7.5 6.9 10.8			
	054 VEHICLE TRNG-M113A1	3.1 2.8 3.4 N 99	4. 3. 4. 99	12.4 8.4 13.6			
	TOTAL SUM OF PRODUCTS	MEAN LOW HIGH	185.7 136.7 244.1				

E. N. C.

		HOURS	FREQUENCY	YEAR TOTAL HOURS
004 N+C TRAINING (IND)	MEAN	3.5	6.	28.0
	LOW	3.2	7.	22.4
	HIGH	3.8	8.	30.4
	N	161	153	
005 N+C TRAINING (TRACK OR WHEELED VEHICLE)	MEAN	2.3	6.	13.8
	LOW	2.1	6.	12.6
	HIGH	2.5	7.	17.5
	N	150	156	
006 N+C TRAINING (TANK)	MEAN	2.2	6.	13.2
	LOW	2.0	5.	10.0
	HIGH	2.4	7.	16.8
	N	114	117	
TOTAL SUM OF PRODUCTS			55.0	
	MEAN		45.0	
	LOW		64.7	
	HIGH			

E. RECON. SECURITY

E. RECON. SECURITY				HOURS	FREQUENCY	YEAR TOTAL HOURS
035 NIGHT VISION SIGHT	MEAN	2.3		7.		14.1
	LOW	2.1		6.		12.6
	HIGH	2.6		8.		20.8
	N	147		136		
034 CAMOUFLAGE- CONCEALMENT	MEAN	7.1		9.		63.9
	LOW	6.3		8.		50.4
	HIGH	7.9		10.		79.0
	N	144		152		
036 OP OPERATION	MEAN	2.5		5.		12.5
	LOW	2.2		5.		11.0
	HIGH	2.9		6.		16.8
	N	162		159		
037 INTELLIGENCE/ SECURITY	MEAN	2.5		6.		15.0
	LOW	2.2		6.		13.2
	HIGH	2.7		7.		18.9
	N	170		162		
040 SURVEILLANCE	MEAN	2.9		6.		17.4
	LOW	2.6		5.		13.0
	HIGH	3.3		6.		19.8
	N	161		153		
041 GROUND NAVIGATION	MEAN	5.7		7.		39.9
	LOW	5.3		6.		31.8
	HIGH	6.1		7.		42.7
	N	155		158		
051 SECURITY	MEAN	1.9		3.		5.7
	LOW	1.7		3.		5.1
	HIGH	2.1		4.		8.4
	N	157		150		
055 MAP READING	MEAN	4.4		6.		26.4
	LOW	4.1		6.		24.6
	HIGH	4.8		7.		33.6
	N	163		157		
TOT. SUM OF PRODUCTS						
	MEAN					196.9
	LOW					161.7
	HIGH					240.0

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002 MINN MORTAR(CARRIER MOUNTED) DUTIES	HOURS		FREQUENCY	YEAR	
	WFM	LOM		TOTAL	HOURS
	8.9	7.7	16.	142.4	
	10.1	19.	14.	187.8	
N	10.4	11.8	19.	191.9	

MEAN	8.9	16.	142.4
LOW	7.7	14.	107.0
HIGH	10.1	19.	191.9
N	104	118	

MEAN	9.2	17.	156.4
LOW	8.0	14.	112.0
HIGH	10.4	19.	197.6
N	121	133	

MEAN	2.2	7.	15.4
LOW	2.0	6.	12.0
HIGH	2.4	8.	19.2
N	153	157	

MEAN	2.6	6.	15.6
LOW	2.4	5.	12.0
HIGH	2.8	7.	19.6
N	96	98	

MEAN	2.6	9.	23.4
LOW	2.3	8.	18.4
HIGH	2.9	10.	29.0
N	110	105	

MEAN	2.7	9.	24.3
LOW	2.3	8.	19.4
HIGH	3.0	11.	33.0
N	121	108	

W FAN	2.2	9.	19.6
LOW	2.0	7.	14.0
HIGH	2.4	10.	24.0
N	141	142	

MEAN	2.8	9.	25.2
LOW	2.6	8.	20.8
HIGH	2.9	10.	29.0
N	151	160	

MEAN	1.7	5.	6.5
LOW	1.5	4.	6.0
HIGH	1.9	6.	10.8
N	164	158	

S. NO.	WEAPON	TYPE	MEAN	LOW	HIGH	N	HOURS	FREQUENCY	HOURS	YEAR TOTAL
022	M1	SUBMACHINEGUN	MEAN	LOW	HIGH	N	1.8	5.	9.0	
							1.7	4.	6.8	
							2.0	6.	12.0	
							1.8	145		
024	TOW		MEAN	LOW	HIGH	N	3.6	12.	43.2	
							3.3	10.	33.0	
							4.0	14.	56.0	
							1.2	126		
026	106MM	PCL	MEAN	LOW	HIGH	N	4.3	7.	30.1	
							3.7	6.	22.2	
							4.9	8.	39.2	
							7.2	70		
027	M16	PLOTTING BOARD	MEAN	LOW	HIGH	N	4.2	11.	46.2	
							3.8	10.	38.0	
							4.6	12.	55.2	
							1.3	122		
028	LOADER	DUTIES	MEAN	LOW	HIGH	N	4.3	9.	38.7	
							3.9	8.	31.2	
							4.8	10.	48.0	
							1.3	107		
030	M40A2	SPECIFIC	MEAN	LOW	HIGH	N	5.4	19.	102.6	
							4.5	15.	67.5	
							6.3	23.	144.9	
							6.3	65		
031	M40A1	SPECIFIC	MEAN	LOW	HIGH	N	5.6	12.	67.2	
							4.7	10.	47.0	
							6.4	13.	83.2	
							10.5	97		
039	COAX	MACHINEGUN	MEAN	LOW	HIGH	N	2.4	8.	19.2	
							2.2	7.	15.4	
							2.6	10.	26.0	
							10.9	112		
042	WFEVE		MEAN	LOW	HIGH	N	6.0	15.	90.0	
							5.3	12.	63.6	
							6.8	17.	115.6	
							117	120		

S. 001

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		HOURS	FREQUENCY	YEAR TOTAL HOURS
046 NIGHT FIRING-M40	MEAN	3.1	5.	15.5
	LOW	2.9	4.	11.6
	HIGH	3.4	5.	17.0
	N	114	130	
066 FIRING-.45 CALIBER PISTOL	MEAN	2.3	3.	6.9
	LOW	2.1	3.	6.3
	HIGH	2.5	3.	7.5
	N	159	161	
067 FIRING-CALIBER.50 MACHINEGUN	MEAN	2.8	5.	14.0
	LOW	2.5	4.	10.0
	HIGH	3.0	5.	15.0
	N	141	166	
068 NIGHT FIRING-CAL.50 MACHINEGUN	MEAN	2.9	4.	11.6
	LOW	2.7	3.	8.1
	HIGH	3.1	4.	12.4
	N	150	150	
069 FIRING-MONTAR- DISMOUNTED	MEAN	4.5	4.	18.0
	LOW	4.1	4.	16.4
	HIGH	4.8	4.	19.2
	N	125	114	
070 FIRING-TOW	MEAN	4.7	7.	32.9
	LOW	4.3	6.	25.8
	HIGH	5.1	8.	40.8
	N	130	134	
071 FIRING-10MM RCLR	MEAN	4.5	6.	27.0
	LOW	3.9	5.	19.5
	HIGH	5.1	7.	35.7
	N	65	65	
072 FIRING-DPAGON	MEAN	4.3	8.	34.4
	LOW	3.9	7.	27.3
	HIGH	4.7	9.	42.3
	N	112	113	
073 FIRING-M3A1 SU-MACHINEGUN	MEAN	2.3	3.	6.9
	LOW	2.1	3.	6.3
	HIGH	2.5	3.	7.5
	N	148	146	
TOTAL SUM OF PRODUCTS	MEAN		1164.5	
	LOW		871.1	
	HIGH		1473.0	

H. SUPPORT		YEAR	
		TOTAL	HOURS
Q46 FIRE SUPPORT	MEAN	3.1	7.
	LOW	2.9	7.
	HIGH	3.3	8.
	N	147	159
Q56 FORWARD OBSERVER PROCEDURES	MEAN	3.9	7.
	LOW	3.5	6.
	HIGH	4.2	7.
	N	156	153
TOTAL SUM OF PRODUCTS		MEAN	49.0
		LOW	41.3
		HIGH	55.8

1. SUMMARY

	HOURS		FREQUENCY	YEAR TOTAL HOURS
	MEAN	LOW HIGH		
1001 DRIVER MAINTENANCE	3.6	25.	90.0	
	3.2	21.	67.2	
	4.0	29.	116.0	
	N	152		
1132 CASUALTY REMOVAL	1.3	4.	5.2	
	1.2	3.	3.6	
	1.4	4.	5.6	
	N	105		
1147 FIRST AID	3.0	6.	18.0	
	2.7	5.	13.5	
	3.2	6.	19.2	
	N	161		
TOTAL SUM OF PRODUCTS	MEAN	113.2		
	LOW	84.3		
	HIGH	140.8		
GRAND SUM OF PRODUCTS	MEAN	1968.5		
	LOW	1509.4		
	HIGH	2468.2		

TABLE IIIB. SET VII SOLDIER'S MANUAL TASKS--TIME AND FREQUENCIES

FACTORS APPLIED-	95 PER CENT PROFICIENCY			15 PER CENT NOT PRESENT FOR TRAINING			15 PER CENT TRAINER GRADER SUBSTITUTION			35 PER CENT CHANGE IN DUTY POSITION		
	HOURS			FREQUENCY			HOURS			FREQUENCY		
A. RYFLE POSITION	YEAR			TOTAL			HOURS			HOURS		
012 CLAYMIDE	MEAN	1.9		4.			7.6					
	LOW	1.7		4.			6.8					
	HIGH	2.0		4.			8.0					
	N	163		164								
013 A0/AT WINES	MEAN	2.6		3.			7.8					
	LOW	2.5		3.			7.5					
	HIGH	2.8		3.			8.4					
	N	150		142								
048 MUSTILF AIRCRAFT	MEAN	1.7		4.			6.8					
	LOW	1.6		4.			6.4					
	HIGH	1.9		4.			7.6					
	N	156		163								
050 AIRCRAFT IDENTIFICATION	MEAN	2.0		4.			8.0					
	LOW	1.8		4.			7.2					
	HIGH	2.2		5.			11.0					
	N	156		153								
065 DEMOLITION TRAINING	MEAN	2.5		2.			5.0					
	LOW	2.3		2.			4.6					
	HIGH	2.7		2.			5.4					
	N	147		153								
TOTAL SUM OF PRODUCTS	MEAN			35.2								
	LOW			32.5								
	HIGH			40.4								

B. COMMUNICATIONS

8. COMMUNICATIONS				
		HOURS	FREQUENCY	YEAR TOTAL HOURS
015 RADIO PROCEDURES	MEAN	2.0	6.	12.0
	LOW	1.8	5.	9.0
	HIGH	2.1	6.	12.6
	N	158	162	
018 COMMO EQUIPMENT	MEAN	2.6	6.	15.6
	LOW	2.4	5.	12.0
	HIGH	2.9	6.	17.4
	N	166	149	
052 CF01	MEAN	2.2	5.	11.0
	LOW	2.0	5.	10.0
	HIGH	2.4	6.	14.4
	N	149	162	
TOTAL SUM OF PRODUCTS		MEAN	38.6	
		LOW	31.0	
		HIGH	49.4	

C. FIRE - ANNUAL

			HOURS	FREQUENCY	YEAR TOTAL HOURS
007 IND MOVEMENT SKILLS	MEAN		3.9	6.	23.4
	LOW		3.5	5.	17.5
	HIGH		4.3	6.	25.8
		N	114	117	
008 IND MOVEMENT SKILLS (MORTAR)	MEAN		2.7	5.	13.5
	LOW		2.4	4.	9.6
	HIGH		3.0	5.	15.0
		N	94	112	
009 VEHICLE POSITIONING	MEAN		2.2	5.	11.0
	LOW		2.0	4.	8.0
	HIGH		2.4	5.	12.0
		N	152	157	
010 VEHICLE MOVEMENT	MEAN		3.3	5.	16.5
	LOW		3.0	4.	12.0
	HIGH		3.7	6.	22.2
		N	160	153	
033 TANK EXTERNAL PHONE	MEAN		1.0	3.	3.0
	LOW		.9	3.	2.7
	HIGH		1.1	4.	4.4
		N	114	115	
045 ENEMY MINES	MEAN		2.3	4.	9.2
	LOW		2.2	4.	8.8
	HIGH		2.5	4.	10.0
		N	153	160	
TOTAL SUM OF PRODUCTS					
	MEAN			76.4	
	LOW			58.6	
	HIGH			89.4	

D. WIVE

		HOURS	FREQUENCY	YEAR TOTAL HOURS
020 M113A1 OPERATOR TRAINING	MEAN LOW HIGH N	2.8 2.5 3.1 134	8. 6. 10. 144	22.4 15.0 31.0
021 1/4 TON VEHICLE TRAINING	MEAN LOW HIGH N	2.2 2.0 2.4 148	6. 5. 6. 157	13.2 10.0 14.4
023 AUXILIARY GENERATOR -TRACKED VEHICLE	MEAN LOW HIGH N	2.0 1.9 2.2 133	5. 4. 6. 138	10.0 7.6 13.2
029 DRIVER DUTIES	MEAN LOW HIGH N	5.5 4.7 6.3 112	13. 11. 15. 112	11.5 51.7 94.5
044 FIRE SAFETY	MEAN LOW HIGH N	1.1 1.0 1.2 116	3. 2. 3. 103	3.3 2.0 3.6
053 VEHICLE TRNG-1/4TON	MEAN LOW HIGH N	2.5 2.3 2.7 153	2. 2. 3. 144	5.0 4.6 8.1
054 VEHICLE TRNG-M113A1	MEAN LOW HIGH N	3.1 2.8 3.4 99	3. 2. 3. 99	9.3 5.6 10.2
TOTAL SUM OF PRODUCTS	MEAN LOW HIGH		134.7 96.5 175.0	

E. NUC		HOURS			FREQUENCY	YEAR	
		MEAN	LOW	HIGH		TOTAL	HOURS
'04 NUC TRAINING (TND)	MEAN	3.5			6.	21.0	
	LOW	3.2			5.	16.0	
	HIGH	3.8			6.	22.8	
	N	161			153		
'05 NUC TRAINING (TRACK ON WHEELED VEHICLE)	MEAN	2.3			4.	9.2	
	LOW	2.1			4.	8.4	
	HIGH	2.5			5.	12.5	
	N	150			156		
'06 NUC TRAINING (TANK)	MEAN	2.2			4.	8.8	
	LOW	2.0			4.	8.0	
	HIGH	2.4			5.	12.0	
	N	114			117		
TOTAL SUM OF PRODUCTS		MEAN			39.0		
		LOW			32.4		
		HIGH			47.3		

F. RECON - SECURITY

			HOURS	FREQUENCY	YEAR TOTAL HOURS
025 NIGHT VISION SIGHT	MEAN		2.3	5.	11.5
	LOW		2.1	4.	8.4
	HIGH		2.6	6.	15.6
	N		147	136	
036 CAMOUFLAGE- CONCEALMENT	MEAN		7.1	6.	42.6
	LOW		6.3	7.	37.8
	HIGH		7.9	7.	55.3
	N		144	152	
036 OP OPERATION	MEAN		2.5	4.	10.0
	LOW		2.2	4.	8.8
	HIGH		2.8	4.	11.2
	N		162	159	
037 INTELLIGENCE/ SECURITY	MEAN		2.5	4.	10.0
	LOW		2.2	4.	8.8
	HIGH		2.7	5.	13.5
	N		170	162	
040 SURVEILLANCE	MEAN		2.9	4.	11.6
	LOW		2.6	4.	10.4
	HIGH		3.3	4.	13.2
	N		161	153	
041 GROUND NAVIGATION	MEAN		5.7	5.	28.5
	LOW		5.3	4.	21.2
	HIGH		6.1	5.	30.5
	N		155	158	
051 SECURITY	MEAN		1.9	2.	3.8
	LOW		1.7	2.	3.4
	HIGH		2.1	3.	6.3
	N		157	150	
055 MAP READING	MEAN		4.4	4.	17.6
	LOW		4.1	4.	16.4
	HIGH		4.8	5.	24.0
	N		163	157	
TOTAL SUM OF PRODUCTS					
	MEAN			135.6	
	LOW			115.2	
	HIGH			169.6	

G. S. QDT		HOURS	FREQUENCY	YEAR TOTAL HOURS
002 81MM MORTAR (CARRIER MOUNTED) DUTIES	MEAN	8.9	11.	97.9
	LOW	7.7	10.	77.0
	HIGH	10.1	13.	131.3
	N	104	114	
003 107MM MORTAR (CARRIER MOUNTED) DUTIES	MEAN	9.2	12.	110.4
	LOW	8.0	10.	80.0
	HIGH	10.4	13.	135.2
	N	121	133	
011 M16 RIFLE	MEAN	2.2	5.	11.0
	LOW	2.0	4.	8.0
	HIGH	2.4	6.	14.4
	N	153	157	
014 40MM RCL	MEAN	2.6	4.	10.4
	LOW	2.4	4.	9.6
	HIGH	2.8	5.	14.0
	N	84	88	
015 DRAGON	MEAN	2.6	6.	15.6
	LOW	2.3	6.	13.8
	HIGH	2.9	7.	20.3
	N	110	105	
016 REDEYE MAINTENANCE CHECKS	MEAN	2.7	6.	16.2
	LOW	2.3	6.	13.8
	HIGH	3.0	8.	24.0
	N	121	108	
017 M40 MACHINEGUN	MEAN	2.2	6.	13.2
	LOW	2.0	5.	10.0
	HIGH	2.4	7.	16.8
	N	141	142	
018 CAL. 50 MACHINEGUN	MEAN	2.8	6.	16.8
	LOW	2.4	6.	15.6
	HIGH	2.9	7.	20.3
	N	151	160	
019 .45 CALIBER PISTOL	MEAN	1.7	4.	6.8
	LOW	1.5	3.	4.5
	HIGH	1.8	4.	7.2
	N	164	154	

S-1001

			HOURS	FREQUENCY	YEAR TOTAL HOURS
022 41A1 SUBMACHINEGUN	MEAN		1.8	4.	7.2
	LOW		1.7	3.	5.1
	HIGH		2.0	4.	8.0
	N		145		
024 10W	MEAN		3.6	9.	32.4
	LOW		3.3	7.	23.1
	HIGH		4.0	10.	40.0
	N		132		
026 16MM RCLW	MEAN		4.3	5.	21.5
	LOW		3.7	4.	14.8
	HIGH		4.9	6.	29.4
	N		72		
027 41A PLOTTING BOARD	MEAN		4.2	8.	33.6
	LOW		3.8	7.	26.6
	HIGH		4.6	9.	41.4
	N		134		
028 LOADER OUTIFS	MEAN		4.3	6.	25.8
	LOW		3.9	5.	23.4
	HIGH		4.8	7.	33.6
	N		113		
030 M40A2 SPECIFIC	MEAN		5.4	13.	70.2
	LOW		4.5	11.	49.5
	HIGH		6.3	16.	100.8
	N		63		
031 M40A1 SPECIFIC	MEAN		5.6	9.	50.4
	LOW		4.7	7.	32.9
	HIGH		6.4	9.	57.6
	N		105		
032 COAX MACHINEGUN	MEAN		2.4	6.	14.4
	LOW		2.2	5.	11.0
	HIGH		2.5	7.	18.2
	N		109		
42 M40EYE	MEAN		6.0	11.	66.0
	LOW		5.3	9.	47.7
	HIGH		6.8	12.	81.6
	N		117		

S 001

YEAR
TOTAL
HOURS

HOURS

FREQUENCY

147 VISUAL
COMMUNICATIONS

MEAN
LOW
HIGH
N

4.
4.
4.
162

8.0
7.2
8.8

149 ENEMY
VULNERABILITIES

MEAN
LOW
HIGH
N

4.
4.
4.
158

7.2
6.8
8.0

157 RANGE FIRING-MORTAR
-MOUNTED

MEAN
LOW
HIGH
N

4.
4.
5.
116

21.6
19.2
30.5

158 FIRING-CLAYMINE

MEAN
LOW
HIGH
N

2.
2.
2.
148

3.8
3.4
4.0

159 NIGHT FIRING-MIGAL

MEAN
LOW
HIGH
N

3.
3.
3.
144

8.4
5.2
9.0

160 DAY FIRING-MIGAL

MEAN
LOW
HIGH
N

4.
3.
4.
164

16.4
11.1
17.6

161 FIRING-LAW

MEAN
LOW
HIGH
N

4.
3.
4.
160

10.4
7.2
11.2

162 HAND GRENADES

MEAN
LOW
HIGH
N

2.
2.
2.
155

4.2
3.8
4.6

163 FIRING-GRENADE
LAUNCHED

MEAN
LOW
HIGH
N

3.
3.
4.
162

7.5
6.9
10.8

S 1001

YEAR
TOTAL
HOURSHOURS
FREQUENCY

066 NIGHT FIRING-M60

MEAN
LOW
HIGH
N3.1
2.9
3.4
1144.
3.
4.
13012.4
8.7
13.6066 FIRING-.45 CALIBER
PISTOLMEAN
LOW
HIGH
N2.3
2.1
2.5
1592.
2.
2.
1614.6
4.2
5.0067 FIRING-CALIBER.50
MACHINEGUNMEAN
LOW
HIGH
N2.8
2.5
3.0
1414.
3.
4.
16611.2
7.5
12.0068 NIGHT FIRING-CAL.50
MACHINEGUNMEAN
LOW
HIGH
N2.9
2.7
3.1
1503.
2.
3.
1508.7
5.4
9.3069 FIRING-MONTAR-
DISMOUNTEDMEAN
LOW
HIGH
N4.5
4.1
4.4
1253.
3.
3.
11413.5
12.3
14.4

070 FIRING-TOW

MEAN
LOW
HIGH
N4.7
4.3
5.1
1305.
4.
6.
13423.5
17.2
30.6

071 FIRING-10MM RCLR

MEAN
LOW
HIGH
N4.5
3.9
5.1
654.
4.
5.
6518.0
15.6
25.5

072 FIRING-Dragon

MEAN
LOW
HIGH
N4.3
3.9
4.7
1126.
5.
6.
11325.8
19.5
28.2073 FIRING-M3A1
500-MACHINEGUNMEAN
LOW
HIGH
N2.3
2.1
2.5
1482.
2.
2.
1464.6
4.2
5.0

TOTAL SUM OF PRODUCTS

MEAN
LOW
HIGH829.6
631.8
1042.2

H. SUPPORT		HOURS		FREQUENCY		TOTAL HOURS	
OAK FINE SUPPORT	MEAN	3.1		5.		15.5	
	LOW	2.9		5.		14.5	
	HIGH	3.3		6.		19.8	
	N	147		159			
J-5, FORWARD OBSERVER PROCEDURES	MEAN	3.9		5.		19.5	
	LOW	3.5		4.		14.0	
	HIGH	4.2		5.		21.0	
	N	156		153			
TOTAL SUM OF PRODUCTS		MEAN	35.0				
		LOW	28.5				
		HIGH	40.8				

YEAR
TOTAL
HOURS

FREQUENCY

HOURS

MEAN
LOW
HIGH
N

0001 DRIVER MAINTENANCE

3.6
3.2
4.0
165

14.
15.
21.
152

64.8
48.0
84.0

MEAN
LOW
HIGH
N

002 CASUALTY REMOVAL

1.3
1.2
1.4
104

3.
2.
3.
105

3.9
2.4
4.2

MEAN
LOW
HIGH
N

007 FIRST AID

3.0
2.7
3.2
146

4.
4.
4.
161

12.0
10.8
12.8

MEAN
LOW
HIGH

TOTAL SUM OF PRODUCTS

80.7
61.2
101.0

MEAN
LOW
HIGH

GRAND SUM OF PRODUCTS

1405.0
1087.7
1750.1

TABLE III.C. SET VII SOLDIER'S MANUAL TASKS--TIME AND FREQUENCIES

FACTORS APPLIED-	95 PER CENT PROFICIENCY			60 PER CENT NOT PRESENT FOR TRAINING			15 PER CENT TRAINER GRADER SUBSTITUTION			35 PER CENT CHANGE IN DUTY POSITION		
	MEAN	LOW	HIGH	MEAN	LOW	HIGH	MEAN	LOW	HIGH	MEAN	LOW	HIGH
A. TITLE POSITION	HOURS			FREQUENCY			TOTAL			YEAR		
	HOURS			FREQUENCY			TOTAL			HOURS		
012 CLAYMINE	1.9	1.7	2.0	13.	13.	15.	24.7	22.1	30.0			
013 AIR/AT MINS	2.6	2.5	2.8	10.	10.	10.	26.0	25.0	28.0			
014 STILL AIRCRAFT IDENTIFICATION	1.7	1.6	1.9	13.	13.	15.	22.1	20.8	28.5			
015 AIRCRAFT IDENTIFICATION	2.0	1.9	2.2	15.	13.	18.	30.0	23.4	39.6			
016 DEMOLITION TRAINING	2.5	2.3	2.7	8.	8.	8.	20.0	18.4	21.6			
TOTAL SUM OF PRODUCTS							122.9	109.7	147.7			

B. COMMUNITATIONS		YEAR		TOTAL	
		HOURS	FREQUENCY	HOURS	HOURS
OAS RADIO PROCEDURES	MEAN	2.0	21.	42.0	
	LOW	1.9	18.	32.4	
	HIGH	2.1	23.	48.3	
	N	154	162		
OIR COMMO EQUIPMENT	MEAN	2.6	21.	54.6	
	LOW	2.4	18.	43.2	
	HIGH	2.9	23.	66.7	
	N	166	149		
O-2 C-01	MEAN	2.2	18.	39.6	
	LOW	2.0	18.	36.0	
	HIGH	2.4	21.	50.4	
	N	149	162		
TOTAL SUM OF PRODUCTS		MEAN	136.2		
		LOW	111.6		
		HIGH	165.4		

C. FIELD ANALYSIS

			HOURS	FREQUENCY	YEAR TOTAL HOURS
007 IUD MOVEMENT SKILLS	MEAN		3.9	21.	81.9
	LOW		3.5	18.	63.0
	HIGH		4.3	23.	98.9
	N		116	117	
008 IUD MOVEMENT SKILLS (MORTAR)	MEAN		2.7	18.	48.6
	LOW		2.4	15.	36.0
	HIGH		3.0	18.	54.0
	N		98	112	
009 VEHICLE POSITIONING	MEAN		2.2	18.	39.6
	LOW		2.0	15.	30.0
	HIGH		2.4	18.	43.2
	N		192	157	
010 VEHICLE MOVEMENT	MEAN		3.3	18.	59.4
	LOW		3.0	15.	45.0
	HIGH		3.7	21.	77.7
	N		160	153	
013 TANK EXTERNAL PHONE	MEAN		1.0	10.	10.0
	LOW		.9	10.	9.0
	HIGH		1.1	13.	14.3
	N		114	115	
045 ENEMY MINES	MEAN		2.3	13.	29.9
	LOW		2.2	13.	28.6
	HIGH		2.5	15.	37.5
	N		153	160	
TOTAL SUM OF PRODUCTS	MEAN			269.4	
	LOW			211.6	
	HIGH			325.6	

			HOURS	FREQUENCY	YEAR TOTAL HOURS
120	113A1 OPERATOR TRAINING	MEAN LOW HIGH N	2.4 2.5 3.1 134	28. 23. 36. 144	78.4 57.5 111.6
121	1/4 TON VEHICLE TRAINING	MEAN LOW HIGH N	2.2 2.0 2.4 149	21. 18. 23. 157	46.2 36.0 55.2
123	AUXILIARY GENERATOR -TRACKED VEHICLE	MEAN LOW HIGH N	2.0 1.9 2.2 133	18. 15. 21. 138	36.0 28.5 46.2
129	OVER DUTIES	MEAN LOW HIGH N	5.5 4.7 6.3 112	46. 39. 54. 112	253.0 183.3 340.2
144	FIRE SAFETY	MEAN LOW HIGH N	1.1 1.0 1.2 116	10. 8. 10. 103	11.0 8.0 12.0
153	VEHICLE TRNG-1/4TON	MEAN LOW HIGH N	2.5 2.3 2.7 153	8. 8. 10. 144	20.0 18.4 27.0
154	VEHICLE TRNG-113A1	MEAN LOW HIGH N	3.1 2.8 3.4 99	10. 8. 10. 99	31.0 22.4 34.0
TOTAL SUM OF PRODUCTS		MEAN LOW HIGH		475.4 354.1 626.2	

E. N-C			HOURS		FREQUENCY	YEAR	
			TOTAL				
104 N-C TRAINING (IND)	MEAN	3.5	21.	73.5			
	LOW	3.2	18.	57.6			
	HIGH	3.8	21.	79.8			
	N	161	153				
105 N-C TRAINING (TRACK OR WHEELED VEHICLE)	MEAN	2.3	15.	34.5			
	LOW	2.1	15.	31.5			
	HIGH	2.5	18.	45.0			
	N	150	156				
106 N-C TRAINING (TANK)	MEAN	2.2	15.	33.0			
	LOW	2.0	13.	26.0			
	HIGH	2.4	18.	43.2			
	N	114	117				
TOTAL SUM OF PRODUCTS	MEAN		141.0				
	LOW		115.1				
	HIGH		168.0				

F. WOODS SECURITY				HOURS		FREQUENCY		YEAR TOTAL HOURS	
005 NIGHT VISION SIGHT				MEAN	2.3	18.		41.4	
				LOW	2.1	15.		31.5	
				HIGH	2.6	21.		54.6	
				N	147	136			
014 CAMOUFLAGE- CONCEALMENT				MEAN	7.1	23.		163.3	
				LOW	6.3	21.		132.3	
				HIGH	7.9	26.		205.4	
				N	144	152			
016 AIR OP. OPERATION				MEAN	2.5	13.		32.5	
				LOW	2.2	13.		28.6	
				HIGH	2.8	15.		42.0	
				N	162	159			
017 INTELLIGENCE/ SECURITY				MEAN	2.5	15.		37.5	
				LOW	2.2	15.		33.0	
				HIGH	2.7	18.		48.6	
				N	170	162			
020 SURVEILLANCE				MEAN	2.9	18.		43.5	
				LOW	2.6	13.		33.8	
				HIGH	3.3	15.		49.5	
				N	161	153			
041 (GROUND) NAVIGATION				MEAN	5.7	18.		102.6	
				LOW	5.3	15.		79.5	
				HIGH	6.1	18.		109.8	
				N	155	154			
051 SECURITY				MEAN	1.9	8.		15.2	
				LOW	1.7	8.		13.6	
				HIGH	2.1	10.		21.0	
				N	147	150			
055 AIR HEADING				MEAN	4.4	15.		66.0	
				LOW	4.1	15.		61.5	
				HIGH	4.8	18.		86.4	
				N	143	157			
TOTAL SUM OF PRODUCTS				MEAN		502.0			
				LOW		413.9			
				HIGH		617.3			

75

SPOT	YFAH	TOTAL	HOURS	FREQUENCY	HOURS	YFAH	TOTAL	HOURS
022 001 SUBMACHINE GUN	MEAN	1.4	13.	21.4				
	LOW	1.7	10.	17.0				
	HIGH	2.0	15.	10.0				
	N	145						
024 100	MEAN	3.6	31.	111.6				
	LOW	3.3	26.	85.8				
	HIGH	4.0	36.	144.0				
	N	132	126					
026 100MM GUN	MEAN	4.3	18.	77.4				
	LOW	3.7	15.	55.5				
	HIGH	4.9	21.	102.9				
	N	72	70					
027 016 PLUTING BOARD	MEAN	4.2	28.	117.6				
	LOW	3.9	26.	98.8				
	HIGH	4.6	31.	142.6				
	N	134	122					
029 100MM MORTARS	MEAN	4.3	23.	98.9				
	LOW	3.9	21.	91.9				
	HIGH	4.8	26.	124.8				
	N	113	107					
030 00002 SPECIFIC	MEAN	5.4	49.	264.6				
	LOW	4.5	39.	175.5				
	HIGH	6.3	59.	311.7				
	N	61	65					
031 00001 SPECIFIC	MEAN	5.6	31.	173.6				
	LOW	4.7	26.	122.2				
	HIGH	6.4	33.	211.2				
	N	105	97					
032 00001 SPECIFIC	MEAN	2.4	21.	50.4				
	LOW	2.2	18.	39.6				
	HIGH	2.6	26.	67.6				
	N	109	112					
033 00001 SPECIFIC	MEAN	6.0	39.	234.0				
	LOW	5.3	31.	164.3				
	HIGH	6.4	44.	290.2				
	N	117	120					

SHEET	YEAR	TOTAL	HOURS	FREQUENCY	HOURS	MEAN	LOW	HIGH	N
043 VISUAL COMMUNICATIONS	1943	30.0	2.0	15.	2.0	1.8	1.7	2.2	167
	1944	23.4	1.9	13.	2.2	1.7	2.0	157	158
	1945	33.0	2.2	15.	1.7	1.7	2.0	157	158
	1946	162	1.7	13.	2.2	1.7	2.0	157	158
049 ENEMY VEHICULARITIES	1949	23.4	1.8	13.	1.8	1.7	2.0	157	158
	1950	22.1	1.7	13.	1.8	1.7	2.0	157	158
	1951	30.0	2.0	15.	1.7	1.7	2.0	157	158
	1952	158	1.7	13.	2.2	1.7	2.0	157	158
057 RANGE FIRING-MORTAR -MOUNTED	1947	61.0	5.4	15.	5.4	4.8	6.1	115	116
	1948	62.4	4.8	13.	6.1	4.8	6.1	115	116
	1949	109.8	6.1	18.	115	4.8	6.1	115	116
	1950	116	115	116	115	4.8	6.1	115	116
059 FIRING-CLAYMORE	1949	15.2	1.9	8.	1.9	1.7	2.0	157	158
	1950	13.6	1.7	8.	2.0	1.7	2.0	157	158
	1951	16.0	2.0	8.	1.7	1.7	2.0	157	158
	1952	148	1.7	148	1.7	1.7	2.0	157	158
059 NIGHT FIRING-M161	1949	20.0	2.8	10.	2.8	2.6	3.0	147	148
	1950	20.8	2.6	8.	3.0	2.6	3.0	147	148
	1951	30.0	3.0	10.	2.6	2.6	3.0	147	148
	1952	164	147	144	2.6	2.6	3.0	147	148
060 DAY FIRING-M161	1949	53.3	4.1	13.	4.1	3.7	4.4	159	160
	1950	37.0	3.7	10.	4.4	3.7	4.4	159	160
	1951	57.2	4.4	13.	4.1	3.7	4.4	159	160
	1952	164	159	164	4.1	3.7	4.4	159	160
061 FIRING-LAW	1949	33.8	2.6	13.	2.6	2.4	2.8	147	148
	1950	24.0	2.4	10.	2.8	2.4	2.8	147	148
	1951	36.4	2.8	13.	2.6	2.4	2.8	147	148
	1952	160	147	160	2.6	2.4	2.8	147	148
062 HAND GRENADES	1949	16.8	2.1	8.	2.1	1.9	2.3	157	158
	1950	15.2	1.9	8.	2.3	1.9	2.3	157	158
	1951	18.4	2.3	8.	1.9	1.9	2.3	157	158
	1952	155	157	155	1.9	1.9	2.3	157	158
063 FIRING-GRENADE LAUNCHER	1949	25.0	2.5	10.	2.5	2.3	2.7	147	148
	1950	23.0	2.3	10.	2.7	2.3	2.7	147	148
	1951	35.1	2.7	13.	2.5	2.3	2.7	147	148
	1952	162	147	162	2.5	2.3	2.7	147	148

S. FOOT	YFAM	TOTAL	HOURS	FREQUENCY	HOURS	YFAM	TOTAL	HOURS
164 NIGHT FIRING-M40	MEAN	3.1	13.	40.3	MEAN	2.3	18.4	
	LOW	2.9	10.	29.0	LOW	2.1	16.8	
	HIGH	3.4	13.	44.2	HIGH	2.5	20.0	
	N	118	130		N	159		
166 FIRING--45 CALIBER PI TOL	MEAN	2.3	8.	18.4	MEAN	2.8	16.4	
	LOW	2.1	8.	16.8	LOW	2.5	25.0	
	HIGH	2.5	8.	20.0	HIGH	3.0	39.0	
	N	159	161		N	141		
167 FIRING-CALIBER.50 MACHINEGUN	MEAN	2.8	13.	36.4	MEAN	2.9	29.0	
	LOW	2.5	10.	25.0	LOW	2.7	21.6	
	HIGH	3.0	13.	39.0	HIGH	3.1	31.0	
	N	141	166		N	150		
168 NIGHT FIRING-CAL.50 MACHINEGUN	MEAN	2.9	10.	29.0	MEAN	4.5	45.0	
	LOW	2.7	8.	21.6	LOW	4.1	41.0	
	HIGH	3.1	10.	31.0	HIGH	4.8	48.0	
	N	150	150		N	125		
169 FIRING-MORTAR- DUMMOUNTED	MEAN	4.5	10.	45.0	MEAN	4.7	84.6	
	LOW	4.1	10.	41.0	LOW	4.3	64.5	
	HIGH	4.8	10.	48.0	HIGH	5.1	107.1	
	N	125	114		N	130		
170 FIRING-TOW	MEAN	4.7	18.	84.6	MEAN	4.5	67.5	
	LOW	4.3	15.	50.7	LOW	3.4	50.7	
	HIGH	5.1	21.	91.6	HIGH	5.1	91.6	
	N	130	134		N	65		
171 FIRING-106MM HELIX	MEAN	4.5	15.	67.5	MEAN	4.3	90.3	
	LOW	3.4	13.	50.7	LOW	3.9	70.2	
	HIGH	5.1	18.	91.6	HIGH	4.7	108.1	
	N	65	65		N	112		
172 FIRING-DRAGON	MEAN	4.3	21.	90.3	MEAN	2.3	18.4	
	LOW	3.9	18.	70.2	LOW	2.1	16.8	
	HIGH	4.7	23.	108.1	HIGH	2.5	20.0	
	N	112	113		N	148		
173 FIRING-131 SUBMACHINEGUN	MEAN	2.3	8.	18.4	MEAN	2.3	2905.2	
	LOW	2.1	8.	16.8	LOW	2.1	2246.3	
	HIGH	2.5	8.	20.0	HIGH	2.5	3798.4	
	N	148	146		N	148		
TOTAL SUM OF PRODUCTS	MEAN	2.3	2905.2		MEAN	2.3	2905.2	
	LOW	2.1	2246.3		LOW	2.1	2246.3	
	HIGH	2.5	3798.4		HIGH	2.5	3798.4	

U.S. SUPPORT

			HOURS	FREQUENCY	YEAR TOTAL HOURS
U.S. FIRE SUPPORT	MEAN		3.1	18.	55.8
	LOW		2.9	18.	52.2
	HIGH		3.3	21.	69.3
	N		147	159	
U.S. FORWARD OBSERVER P.W. CELOSITY	MEAN		3.9	18.	70.2
	LOW		3.5	15.	52.5
	HIGH		4.2	18.	75.6
	N		156	153	
TOTAL SUM OF PRODUCTS	MEAN			126.0	
	LOW			104.7	
	HIGH			144.9	

L. STATE	DESCRIPTION	HOURS		FREQUENCY	YEAR TOTAL HOURS
		MEAN	N		
11	OUT-OF-VEH MAINTENANCE	3.6	64	230.4	
		LOW	54	172.8	
		HIGH	75	300.0	
		N	152		
132	CASUALTY REMOVAL	1.3	10	13.0	
		LOW	8	9.6	
		HIGH	10	14.0	
		N	105		
147	FIRST AID	3.0	15	45.0	
		LOW	13	35.1	
		HIGH	15	48.0	
		N	161		
TOTAL SUM OF PRODUCTS		MEAN	289.4		
		LOW	217.5		
		HIGH	362.0		
GRAND SUM OF PRODUCTS		MEAN	5056.6		
		LOW	3884.4		
		HIGH	6355.7		

TABLE IIID. SF 1 VII SOLIDER'S MANUAL TASKS--TIME AND FREQUENCIES

A. TITLE POSITION	FACTORS APPLIED-	HOURS			FREQUENCY	YEAR	
		MEAN	LOW	HIGH		TOTAL	HOURS
112 CLAYMORE		1.9			4.	7.6	
	LOW	1.7			4.	6.8	
	HIGH	2.0			4.	8.0	
	N	163			163		
113 6 /AT MINS		2.4			3.	7.8	
	LOW	2.5			3.	7.5	
	HIGH	2.8			3.	8.4	
	N	150			142		
114 4-5-11 AIRCRAFT		1.7			4.	6.8	
	LOW	1.4			4.	6.4	
	HIGH	1.9			4.	7.6	
	N	156			163		
115 AIRCRAFT IDENTIFICATION		2.0			4.	8.0	
	LOW	1.4			4.	7.2	
	HIGH	2.2			5.	11.0	
	N	156			153		
116 11-11-11 TRAINING		2.5			2.	5.0	
	LOW	2.3			2.	4.6	
	HIGH	2.7			2.	5.4	
	N	147			153		
TOTAL SUM OF PRODUCTS					35.2		
	LOW				32.5		
	HIGH				40.4		

B. COMMENTS		HOURS		FREQUENCY		YEAR TOTAL HOURS	
345 RADIO PROCEDURES		MEAN	2.0	6.		12.0	
	LOW		1.	5.		9.0	
	HIGH		2.1	6.		12.6	
	N		154	162			
374 COMMO EQUIPMENT		MEAN	2.6	6.		15.6	
	LOW		2.4	5.		12.0	
	HIGH		2.9	6.		17.4	
	N		166	144			
452 C-01		MEAN	2.2	5.		11.0	
	LOW		2.0	5.		10.0	
	HIGH		2.4	6.		14.4	
	N		144	162			
TOTAL SUM OF PRODUCTS		MEAN		28.6			
	LOW			31.0			
	HIGH			44.4			

C. F. J. F. A. DIVE	YEAR	TOTAL	HOURS	FREQUENCY	HOURS	MEAN	LOW	HIGH	N
07 (10) MOVEMENT SKILLS			3.9	6.					
		23.4							
		17.5							
		25.8							
08 (10) MOVEMENT SKILLS (CHARTER)			116	117					
09 (10) MOVEMENT SKILLS			2.7	5.					
		13.5							
		9.6							
		15.0							
10 (10) VEHICLE POSITIONING			2.2	5.					
		11.0							
		8.0							
		12.0							
11 (10) VEHICLE MOVEMENT			3.3	5.					
		16.5							
		12.0							
		22.2							
12 (10) TANK INTERNAL PHONE			1.0	3.					
		3.0							
		2.7							
		4.4							
13 (10) ENEMY WINGS			2.3	4.					
		9.2							
		6.8							
		10.0							
TOT 1 SUM OF PRODUCTS			151	160					
TOT 1 SUM OF PRODUCTS			76.4	76.4					
		58.4							
		89.4							

D. . . .		HOURS		FREQUENCY	YEAR	
		MEAN	LOW		TOTAL	HOURS
120 TUBAL OPERATOR TRAINING	MEAN	2.4		8.	22.4	
	LOW	2.5		6.	15.0	
	HIGH	3.1		10.	31.0	
	N	134		144		
121 1/4 TON VEHICLE TRAINING	MEAN	2.2		6.	13.2	
	LOW	2.0		5.	10.0	
	HIGH	2.4		6.	14.4	
	N	148		157		
123 AUXILIARY OPERATOR -TRACKED VEHICLE	MEAN	2.0		5.	10.0	
	LOW	1.9		4.	7.6	
	HIGH	2.2		6.	13.2	
	N	133		134		
129 DRIVER DUTIES	MEAN	5.5		13.	71.5	
	LOW	4.7		11.	51.7	
	HIGH	6.3		15.	94.5	
	N	112		112		
144 FIRE SAFETY	MEAN	1.1		3.	3.3	
	LOW	1.0		2.	2.0	
	HIGH	1.2		3.	3.6	
	N	116		103		
153 VEHICLE TONE-1/4 TON	MEAN	2.5		2.	5.0	
	LOW	2.3		2.	4.6	
	HIGH	2.7		3.	8.1	
	N	151		144		
154 VEHICLE TONE-MILLIA	MEAN	3.1		3.	9.3	
	LOW	2.4		2.	5.6	
	HIGH	3.4		3.	10.2	
	N	99		99		
TOTAL SUM OF PRODUCTS		MEAN		134.7		
		LOW		94.5		
		HIGH		175.0		

		HOURS		FREQUENCY	YEAR TOTAL HOURS
104. JIC TRAINING (IND)	MEAN	3.5		6.	21.0
	LOW	3.2		5.	16.0
	HIGH	3.8		6.	22.8
	N	161		153	
105. JIC TRAINING (TRACK ON WHEELED VEHICLE	MEAN	2.3		4.	9.2
	LOW	2.1		4.	8.4
	HIGH	2.5		5.	12.5
	N	150		156	
106. JIC TRAINING (TANK)	MEAN	2.2		4.	8.8
	LOW	2.0		4.	8.0
	HIGH	2.4		5.	12.0
	N	114		117	
TOT. SUM OF PRODUCTS		MEAN		39.0	
		LOW		32.4	
		HIGH		47.3	

FL RECORD - SECURITY

			HOURS	FREQUENCY	YEAR TOTAL HOURS
005 NIGHT VISION SIGHT	MEAN		2.3	5.	11.5
	LOW		2.1	4.	8.4
	HIGH		2.6	6.	15.6
	N		147	136	
014 CAMOUFLAGE - CLOUFCALMENT	MEAN		7.1	6.	42.6
	LOW		4.3	6.	37.8
	HIGH		7.9	7.	55.3
	N		144	152	
016 DR. OPERATION	MEAN		2.5	4.	10.0
	LOW		2.2	4.	8.8
	HIGH		2.8	4.	11.2
	N		162	159	
037 INTELLIGENCE/ SECURITY	MEAN		2.5	4.	10.0
	LOW		2.2	4.	8.8
	HIGH		2.7	5.	13.5
	N		170	162	
040 SURVEILLANCE	MEAN		2.9	4.	11.6
	LOW		2.6	4.	10.4
	HIGH		3.3	4.	13.2
	N		161	153	
041 GROUND NAVIGATION	MEAN		5.7	5.	28.5
	LOW		5.3	4.	21.2
	HIGH		6.1	5.	30.5
	N		155	158	
051 SECURITY	MEAN		1.9	2.	3.8
	LOW		1.7	2.	3.4
	HIGH		2.1	3.	6.3
	N		157	150	
055 MAP READING	MEAN		4.4	4.	17.6
	LOW		4.1	4.	16.4
	HIGH		4.8	5.	24.0
	N		164	157	
TOT. SUM OF PRODUCTS					
	MEAN				135.4
	LOW				115.2
	HIGH				169.4

6. SUMMARY

		HOURS	FREQUENCY	YEAR TOTAL HOURS
02 41MM MORTAR (CARRIER MOUNTED) DUTIES	MEAN	8.9	12.	106.8
	LOW	7.7	10.	77.0
	HIGH	10.1	14.	141.4
	N	104	118	
03 107MM MORTAR (CAR- RIER MOUNTED) DUTIES	MEAN	9.2	12.	110.4
	LOW	8.0	10.	80.0
	HIGH	10.4	14.	145.6
	N	121	133	
01 16MM RIFLE	MEAN	2.2	5.	11.0
	LOW	2.0	4.	8.0
	HIGH	2.4	6.	14.4
	N	153	157	
04 41MM RCL	MEAN	2.6	4.	10.4
	LOW	2.4	4.	9.6
	HIGH	2.8	5.	14.0
	N	86	88	
05 10-40MM	MEAN	2.6	6.	15.6
	LOW	2.3	6.	13.8
	HIGH	2.9	7.	20.3
	N	110	105	
06 MEDEVAC MAINTENANCE CHECKS	MEAN	2.7	6.	16.2
	LOW	2.3	6.	13.8
	HIGH	3.0	8.	24.0
	N	121	108	
07 4.0 MACHIN GUN	MEAN	2.2	6.	13.2
	LOW	2.0	5.	10.0
	HIGH	2.4	7.	16.8
	N	141	142	
08 4.0 MACHIN GUN	MEAN	2.4	6.	16.8
	LOW	2.6	6.	15.6
	HIGH	2.9	7.	20.3
	N	151	160	
09 4.5 CALIBER PISTOL	MEAN	1.7	4.	6.8
	LOW	1.5	3.	4.5
	HIGH	1.8	4.	7.2
	N	164	158	

5-201

YEAR
TOTAL
HOURS

FREQUENCY

HOURS

022 001 SUBMACHINE GUN

4.
7.2
5.1
8.0

4.
3.
4.
145

1.9
1.7
2.0
145

MEAN
LOW
HIGH
N

024 104

32.4
23.1
40.0

9.
7.
10.
126

3.4
3.3
4.0
132

MEAN
LOW
HIGH
N

026 16MM GUN

21.5
14.8
29.4

5.
4.
6.
70

4.3
3.7
4.9
72

MEAN
LOW
HIGH
N

027 016 PLOTTING BOARD

33.6
26.6
41.4

8.
7.
9.
122

4.2
3.8
4.6
134

MEAN
LOW
HIGH
N

028 LOADER DUTIES

25.8
22.4
33.6

6.
6.
7.
107

4.3
3.2
4.8
113

MEAN
LOW
HIGH
N

030 0002 SPECIFIC

75.6
49.5
107.1

14.
11.
17.
65

5.4
4.5
6.3
61

MEAN
LOW
HIGH
N

031 0001 SPECIFIC

50.4
32.9
57.6

9.
7.
9.
97

5.6
4.7
6.4
104

MEAN
LOW
HIGH
N

032 0002 MACHINE GUN

14.4
11.0
18.2

6.
5.
7.
112

2.4
2.2
2.8
109

MEAN
LOW
HIGH
N

033 0003

66.0
47.7
81.6

11.
9.
12.
120

6.0
5.1
6.4
117

MEAN
LOW
HIGH
N

SPENT		HOURS			FREQUENCY	YEAR	
		MEAN	LOW	HIGH		TOTAL	HOURS
AIR VISUAL COMMUNICATIONS	MEAN	2.0			4.	4.0	
	LOW	1.8			4.	7.2	
	HIGH	2.2			4.	8.8	
	N	167			162		
AIR C-119 MY VULNERABILITIES	MEAN	1.8			4.	7.2	
	LOW	1.7			4.	6.8	
	HIGH	2.0			4.	8.0	
	N	157			158		
157 M NGF FIRING--MORTAR (CONT'D)	MEAN	5.4			4.	21.6	
	LOW	4.8			4.	19.2	
	HIGH	6.1			5.	30.5	
	N	115			116		
158 FIRING--CLAYMORE	MEAN	1.9			2.	3.8	
	LOW	1.7			2.	3.4	
	HIGH	2.0			2.	4.0	
	N	152			148		
159 NIGHT FIRING--M16A1	MEAN	2.4			3.	8.4	
	LOW	2.6			2.	5.2	
	HIGH	3.0			3.	9.0	
	N	147			144		
160 DAY FIRING--M16A1	MEAN	4.1			4.	16.4	
	LOW	3.7			3.	11.1	
	HIGH	4.4			4.	17.6	
	N	154			164		
161 FIRING--LA	MEAN	2.6			4.	10.4	
	LOW	2.4			3.	7.2	
	HIGH	2.4			4.	11.2	
	N	147			160		
162 BOMB GRENADES	MEAN	2.1			2.	4.2	
	LOW	1.9			2.	3.8	
	HIGH	2.3			2.	4.6	
	N	157			155		
163 FIRING--GPMG (CONT'D)	MEAN	2.5			3.	7.5	
	LOW	2.3			3.	6.9	
	HIGH	2.7			4.	10.8	
	N	147			162		

YFAM	TOTAL	HOURS
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

843.0
 631.2
 1049.0

H. SUPPORT		HOURS		FREQUENCY	YEAR TOTAL HOURS
DATA FILE SUPPORT	MEAN	3.1		5.	15.5
	LOW	2.4		5.	14.5
	HIGH	3.3		6.	19.8
	N	147		159	
DATA FILE SUPPORT P. C. CELESTES	MEAN	3.4		5.	19.5
	LOW	3.5		4.	14.0
	HIGH	4.2		5.	21.0
	N	156		153	
TOTAL SUM OF PRODUCTS		MEAN		35.0	
		LOW		29.5	
		HIGH		40.8	

		HOURS		FREQUENCY		YEAR TOTAL HOURS	
TOTAL MAINTENANCE	MEAN	3.6		18.		64.8	
	LOW	3.2		15.		49.0	
	HIGH	4.0		21.		84.0	
	N	162		52			
CASUALTY REMOVAL	MEAN	1.3		3.		3.9	
	LOW	1.2		2.		2.4	
	HIGH	1.4		3.		4.2	
	N	104		105			
AT FIRST	MEAN	3.0		4.		12.0	
	LOW	2.7		4.		10.8	
	HIGH	3.2		4.		12.8	
	N	146		161			
TOTAL SUM OF PRODUCTS	MEAN			80.7			
	LOW			61.2			
	HIGH			101.0			
GRAND SUM OF PRODUCTS	MEAN			1419.3			
	LOW			1087.7			
	HIGH			1776.9			

TABLE III. SFT VII SOLUTION'S MANUAL TASKS--TIME AND FREQUENCIES

FACTORS APPLIED-	MEAN	LOW	HIGH	N	HOURS	FREQUENCY	YEAR	
							TOTAL	HOURS
A. " ILL POSITION								
12 CLAYMILLS	MEAN	1.9						
	LOW	1.7				3.	5.7	
	HIGH	2.0				3.	5.1	
	N	163				4.	8.0	
13 A /AT - INCS	MEAN	2.6						
	LOW	2.5				2.	5.2	
	HIGH	2.8				2.	5.0	
	N	150				162	5.6	
14 HOSTILE AIRCRAFT	MEAN	1.7						
	LOW	1.6				3.	5.1	
	HIGH	1.9				3.	4.8	
	N	156				163	7.6	
15 AIRCRAFT IDENTIFICATION	MEAN	2.0						
	LOW	1.8				4.	8.0	
	HIGH	2.2				3.	5.4	
	N	156				153	8.8	
16 SOLUTION TRAINING	MEAN	2.5						
	LOW	2.3				2.	5.0	
	HIGH	2.7				2.	4.6	
	N	147				153	5.6	
TOTAL SUM OF PRODUCTS	MEAN							
	LOW					20.0		
	HIGH					24.0		
							35.6	

B. COMMENTS		YEAR		TOTAL	
		HOURS		FREQUENCY	
		HOURS		HOURS	
FOR WOTD EQUIPMENT		MEAN	2.0	5.	10.0
		LOW	1.8	4.	7.2
		HIGH	2.1	5.	10.5
		N	158	162	
FOR COMMU EQUIPMENT		MEAN	2.6	5.	13.0
		LOW	2.4	4.	9.6
		HIGH	2.9	5.	14.5
		N	166	149	
FOR T-01		MEAN	2.2	4.	8.8
		LOW	2.0	4.	8.0
		HIGH	2.4	5.	12.0
		N	149	162	
TOTAL SUM OF PRODUCTS		MEAN		31.8	
		LOW		24.8	
		HIGH		37.0	

DATE	TIME	LOCATION	ACTIVITY	REMARKS	TOTAL HOURS
10/1/78	0800
10/2/78	0800
10/3/78	0800
10/4/78	0800
10/5/78	0800
10/6/78	0800
10/7/78	0800
10/8/78	0800
10/9/78	0800
10/10/78	0800
10/11/78	0800
10/12/78	0800
10/13/78	0800
10/14/78	0800
10/15/78	0800
10/16/78	0800
10/17/78	0800
10/18/78	0800
10/19/78	0800
10/20/78	0800
10/21/78	0800
10/22/78	0800
10/23/78	0800
10/24/78	0800
10/25/78	0800
10/26/78	0800
10/27/78	0800
10/28/78	0800
10/29/78	0800
10/30/78	0800
10/31/78	0800
11/1/78	0800
11/2/78	0800
11/3/78	0800
11/4/78	0800
11/5/78	0800
11/6/78	0800
11/7/78	0800
11/8/78	0800
11/9/78	0800
11/10/78	0800
11/11/78	0800
11/12/78	0800
11/13/78	0800
11/14/78	0800
11/15/78	0800
11/16/78	0800
11/17/78	0800
11/18/78	0800
11/19/78	0800
11/20/78	0800
11/21/78	0800
11/22/78	0800
11/23/78	0800
11/24/78	0800
11/25/78	0800
11/26/78	0800
11/27/78	0800
11/28/78	0800
11/29/78	0800
11/30/78	0800
12/1/78	0800
12/2/78	0800
12/3/78	0800
12/4/78	0800
12/5/78	0800
12/6/78	0800
12/7/78	0800
12/8/78	0800
12/9/78	0800
12/10/78	0800
12/11/78	0800
12/12/78	0800
12/13/78	0800		

95

YEAR		TOTAL		HOURS		FREQUENCY	
1950	1951	LOW	HIGH	MEAN	LOW	HIGH	MEAN
1.331 OPERATOR							
T ININ							
		MEAN	2.8	7.			19.6
		LOW	2.5	5.			12.5
		HIGH	3.1	8.			24.8
		N	138	144			
2.1 1/4 TON VEHICLE							
T ININ							
		MEAN	2.2	5.			11.0
		LOW	2.0	4.			8.0
		HIGH	2.4	5.			12.0
		N	144	157			
3.3 AUXILIARY GENERATOR							
-1 BACKED VEHICLE							
		MEAN	2.0	4.			8.0
		LOW	1.9	4.			7.6
		HIGH	2.2	5.			11.0
		N	133	138			
4.0 GIVEN DUTIES							
		MEAN	5.5	11.			60.5
		LOW	4.7	9.			42.3
		HIGH	6.3	13.			81.9
		N	112	112			
4.4 FIRE SAFETY							
		MEAN	1.1	2.			2.2
		LOW	1.0	2.			2.0
		HIGH	1.2	2.			2.4
		N	116	103			
5.3 VEHICLE TUNING-1/410N							
		MEAN	2.5	2.			5.0
		LOW	2.3	2.			4.6
		HIGH	2.7	2.			5.4
		N	153	144			
5.4 VEHICLE TUNING-11341							
		MEAN	3.1	2.			6.2
		LOW	2.9	2.			5.6
		HIGH	3.4	2.			6.4
		N	94	99			
TOT 1 SUM OF PRODUCTS							
		MEAN		112.5			
		LOW		82.4			
		HIGH		144.3			

E. YRC	HOURS		FREQUENCY	YEAR	
	MEAN	TOTAL		HOURS	HOURS
00A D-C TRAINING (TND)	3.7	5.	17.5		
	LOW	3.2	4.	12.8	
	HIGH	3.4	5.	19.0	
	N	161	153		
00S M-C TRAINING (TRACK ON WHEELED VEHICLE	2.3	4.	9.2		
	LOW	2.1	4.	8.4	
	HIGH	2.5	4.	10.0	
	N	150	156		
00A D-C TRAINING (TANK)	2.2	4.	8.8		
	LOW	2.0	3.	6.0	
	HIGH	2.4	4.	9.6	
	N	114	117		
TOTAL SUM OF PRODUCTS			35.5		
			27.2		
			38.6		

TABLE 1. SUMMARY OF DATA

		HOURS	FREQUENCY	YEAR TOTAL HOURS
1. LIGHT VISION SIGHT	MEAN	2.3	4.	9.2
	LOW	2.1	4.	8.4
	HIGH	2.6	5.	13.0
	N	147	136	
2. LIGHT VISION SIGHT - CO-ORDINATION	MEAN	7.1	5.	35.5
	LOW	6.3	5.	31.5
	HIGH	7.9	6.	47.4
	N	144	152	
3. LIGHT VISION SIGHT - OPERATION	MEAN	2.5	3.	7.5
	LOW	2.2	3.	6.6
	HIGH	2.8	4.	11.2
	N	162	159	
4. INTELLIGENCE/ SECURITY	MEAN	2.5	4.	10.0
	LOW	2.2	4.	8.8
	HIGH	2.7	4.	10.8
	N	170	162	
5. SURVILLANCE	MEAN	2.9	4.	11.6
	LOW	2.6	3.	7.8
	HIGH	3.3	4.	13.2
	N	161	153	
6. SOUND NAVIGATION	MEAN	5.7	4.	22.8
	LOW	5.3	4.	21.2
	HIGH	6.1	4.	24.4
	N	155	154	
7. SECURITY	MEAN	1.9	2.	3.8
	LOW	1.7	2.	3.4
	HIGH	2.1	2.	4.2
	N	157	150	
8. SOUND HEARING	MEAN	4.4	4.	17.6
	LOW	4.1	4.	16.4
	HIGH	4.8	4.	19.2
	N	163	157	
TOTAL SUM OF PRODUCTS	MEAN		118.0	
	LOW		104.1	
	HIGH		143.4	
	N			

6. Summary

YEAR
TOTAL
HOURS

FREQUENCY

HOURS

8.9 10. 89.0
7.7 8. 61.6
10.1 11. 111.1
10.4 11.8

9.2 10. 92.0
8.0 8. 64.0
10.4 11. 115.4
121 133

2.2 4. 8.8
2.0 4. 8.0
2.4 5. 12.0
151 157

2.5 4. 10.4
2.4 3. 7.2
2.4 4. 11.2
RA RA

2.6 5. 13.0
2.3 5. 11.5
2.9 6. 17.4
110 105

2.7 5. 13.5
2.3 5. 11.5
3.0 7. 21.0
121 108

2.2 5. 11.0
2.0 4. 8.0
2.4 6. 14.4
141 142

2.4 5. 14.0
2.6 5. 13.0
2.9 6. 17.4
151 160

1.7 3. 5.1
1.4 2. 3.0
1.4 4. 7.2
144 154

102 41MM MOUNTAIN CARRIER
MOUNTED OUTFITS

103 107MM MOUNTAIN (CAR-
MOUNTED) OUTFIT

11 116 MTR

114 107MM MTR

115 107MM MTR

116 107MM MTR
CHECKS

117 4.0 MACHINEGUN

118 4.0 MACHINEGUN

119 2.5 CALIBER PISTOL

			HOURS	FREQUENCY	YEAR TOTAL HOURS
22	1A1	COMMACHINEGUN	MEAN LOW HIGH N	3. 2. 4. 145	5.4 3.4 8.0
24	1A		MEAN LOW HIGH N	7. 6. 8. 126	25.2 19.8 32.0
26	1A	COMMACHINEGUN	MEAN LOW HIGH N	4. 4. 5. 70	17.2 14.8 24.5
27	1A	PLATTING BOARD	MEAN LOW HIGH N	7. 6. 7. 122	29.4 22.8 32.2
29	1A	LOADER DUTIES	MEAN LOW HIGH N	5. 5. 6. 107	21.5 19.5 28.4
30	1A	SPECIFIC	MEAN LOW HIGH N	11. 9. 14. 65	59.4 40.5 88.2
31	1A	SPECIFIC	MEAN LOW HIGH N	7. 6. 8. 97	39.2 28.2 51.2
33	1A	COMMACHINEGUN	MEAN LOW HIGH N	5. 4. 6. 112	12.0 8.8 15.6
35	1A	DUTIES	MEAN LOW HIGH N	9. 7. 10. 120	54.0 37.1 68.0

SUBJECT		HOURS		FREQUENCY	YEAR	
		MEAN	LOW		TOTAL	HOURS
AT VISUAL COMMUNICATIONS	MEAN	2.0		4.	8.0	
	LOW	1.9		3.	5.4	
	HIGH	2.2		4.	8.8	
	N	167		167		
VSQ F-105 VISUAL COMMUNICATIONS	MEAN	1.9		3.	5.4	
	LOW	1.7		3.	5.1	
	HIGH	2.0		4.	8.0	
	N	157		158		
VS7 RANGE FIRING-MORTAR - MOUNTED	MEAN	5.4		4.	21.6	
	LOW	4.9		3.	14.4	
	HIGH	6.1		4.	24.4	
	N	115		116		
VS8 FIRING-CLAYMORE	MEAN	1.9		2.	3.8	
	LOW	1.7		2.	3.4	
	HIGH	2.0		2.	4.0	
	N	152		148		
VS9 NIGHT FIRING-M161	MEAN	2.4		2.	5.6	
	LOW	2.6		2.	5.2	
	HIGH	3.0		2.	6.0	
	N	147		144		
VS10 DAY FIRING-M161	MEAN	4.1		3.	12.3	
	LOW	3.7		2.	7.4	
	HIGH	4.4		3.	13.2	
	N	159		164		
VS11 FIRING-CA-2	MEAN	2.4		3.	7.8	
	LOW	2.4		2.	4.8	
	HIGH	2.4		3.	8.4	
	N	147		160		
VS12 HAND GRENADES	MEAN	2.1		2.	4.2	
	LOW	1.9		2.	3.8	
	HIGH	2.3		2.	4.6	
	N	157		155		
VS13 FIRING-GRENADE LAUNCHER	MEAN	2.5		2.	5.0	
	LOW	2.3		2.	4.6	
	HIGH	2.7		3.	8.1	
	N	147		162		

			HOURS	FREQUENCY	YEAR TOTAL HOURS
166	NIGHT FIRING-M40	MEAN	3.1	3.	9.3
		LOW	2.9	2.	5.8
		HIGH	3.4	3.	10.2
		N	114	130	
166	FIRING-.45 CALIBER PISTOL	MEAN	2.3	2.	4.6
		LOW	2.1	2.	4.2
		HIGH	2.5	2.	5.0
		N	159	161	
167	FIRING-CALIBER .50 MACHINEGUN	MEAN	2.4	3.	8.4
		LOW	2.5	2.	5.0
		HIGH	3.0	3.	9.0
		N	141	166	
168	NIGHT FIRING-CAL .50 MACHINEGUN	MEAN	2.9	2.	5.8
		LOW	2.7	2.	5.4
		HIGH	3.1	2.	6.2
		N	150	150	
169	FIRING-M2-STAR- DISMOUNTED	MEAN	4.5	2.	9.0
		LOW	4.1	2.	8.2
		HIGH	4.8	2.	9.6
		N	125	114	
170	FIRING-TOW	MEAN	4.7	4.	18.8
		LOW	4.3	4.	17.2
		HIGH	5.1	5.	25.5
		N	130	134	
171	FIRING-10MM RCLH	MEAN	4.5	4.	18.0
		LOW	3.9	3.	11.7
		HIGH	5.1	4.	20.4
		N	65	65	
172	FIRING-Dragon	MEAN	4.3	5.	21.5
		LOW	3.9	4.	15.6
		HIGH	4.7	5.	23.5
		N	112	113	
173	FIRING-M3A1 50 MACHINEGUN	MEAN	2.3	2.	4.6
		LOW	2.1	2.	4.2
		HIGH	2.5	2.	5.0
		N	149	146	
TOTAL SUM OF PRODUCTS					
		MEAN		693.8	
		LOW		514.1	
		HIGH		874.5	

H. Support	YFAM	TOTAL	HOURS	FREQUENCY	HOURS	YFAM	TOTAL
144 FIRE SUPPORT	MEAN	3.1	4.	12.4			
	LOW	2.9	4.	11.6			
	HIGH	3.3	5.	16.5			
	N	147	159				
156 FORWARD OBSERVER PROCEDURES	MEAN	3.9	4.	15.6			
	LOW	3.5	4.	14.0			
	HIGH	4.2	4.	16.8			
	N	156	151				
TOTAL SUM OF PROXIMITY	MEAN	28.0					
	LOW	25.6					
	HIGH	33.3					

	MEAN	HOURS	FREQUENCY	YEAR TOTAL HOURS
OUT OF VEHICLE MAINTENANCE	MEAN	3.6	15.	54.0
	LOW	3.2	13.	41.6
	HIGH	4.0	17.	68.0
	N	165	152	
IN CASUALTY REMOVAL	MEAN	1.3	2.	2.6
	LOW	1.2	2.	2.4
	HIGH	1.4	2.	2.8
	N	104	105	
OUT FIRST AID	MEAN	3.0	4.	12.0
	LOW	2.7	3.	8.1
	HIGH	3.2	4.	12.8
	N	146	161	
TOTAL SUM OF PRODUCTS	MEAN		68.4	
	LOW		52.1	
	HIGH		83.4	
GRAND SUM OF PRODUCTS	MEAN		1178.4	
	LOW		907.4	
	HIGH		1465.0	

TABLE III.F. SFT VII SOLDIER'S MANUAL TASKS--TIME AND FREQUENCIES

A. RYLF POSITION	FACTORS APPLIED-	HOURS	FREQUENCY	YEAR	
				TOTAL	HOURS
112 CLAYMOS	95 PER CENT PROFICIENCY				
	25 PER CENT NOT PRESENT FOR TRAINING				
	25 PER CENT TRAINER GRADE SUBSTITUTION				
	35 PER CENT CHANGE IN DUTY POSITION				
	MEAN	2.6	5.	13.0	
	LOW	2.6	5.	12.0	
	HIGH	2.6	6.	16.8	
	N	163	164		
113 11/AT WINGS	MEAN	3.6	4.	14.4	
	LOW	3.5	4.	14.0	
	HIGH	3.9	4.	15.6	
	N	150	142		
114 11/STILL AIRCRAFT	MEAN	2.4	5.	12.0	
	LOW	2.2	5.	11.0	
	HIGH	2.6	6.	15.6	
	N	156	163		
115 AIRCRAFT IDENTIFICATION	MEAN	2.4	6.	16.8	
	LOW	2.5	5.	12.5	
	HIGH	3.1	7.	21.7	
	N	156	153		
116 11/MOLITION TRAINING	MEAN	3.5	3.	10.5	
	LOW	3.2	3.	9.6	
	HIGH	3.8	3.	11.4	
	N	147	153		
TOTAL SUM OF PRODUCTS	MEAN		66.7		
	LOW		59.1		
	HIGH		81.1		

B. COMMON TOOLS			YEAR	
			TOTAL	HOURS
AS & INTO EQUIPMENTS	MEAN	2.4	4.	22.4
	LOW	2.5	7.	17.5
	HIGH	2.9	9.	26.1
	N	154	162	
IN COMMON EQUIPMENT	MEAN	3.5	8.	28.4
	LOW	3.4	7.	23.1
	HIGH	4.0	9.	36.0
	N	166	149	
2 (001)	MEAN	3.1	7.	21.7
	LOW	2.4	7.	19.6
	HIGH	3.3	8.	26.4
	N	149	162	
TOTAL SUM OF PRODUCTS			12.9	
	MEAN		16.2	
	LOW		98.5	
	HIGH			

C. FIVE - INTRINSIC		HOURS		FREQUENCY		YEAR TOTAL HOURS	
07. 100 MOVEMENT SKILLS		MEAN	5.4	8.		43.2	
	LOW		4.9	7.		34.3	
	HIGH		6.0	9.		54.0	
	N		116	117			
08. 100 MOVEMENT SKILLS (C. STAD)		MEAN	3.8	7.		26.6	
	LOW		3.3	6.		19.8	
	HIGH		4.2	7.		29.4	
	N		98	112			
09. VEHICLE POSITIONING		MEAN	3.1	7.		21.7	
	LOW		2.8	6.		16.8	
	HIGH		3.3	7.		23.1	
	N		152	157			
10. VEHICLE MOVEMENT		MEAN	4.6	7.		32.2	
	LOW		4.2	6.		25.2	
	HIGH		5.1	8.		40.8	
	N		160	153			
11. 100 EXTERNAL PHONE		MEAN	1.4	4.		5.6	
	LOW		1.3	4.		5.2	
	HIGH		1.5	5.		7.5	
	N		114	115			
12. 100 WINGS		MEAN	3.2	5.		16.0	
	LOW		3.1	5.		15.5	
	HIGH		3.5	6.		21.0	
	N		153	160			
TOT. SUM OF PRODUCTS		MEAN				145.3	
	LOW					116.8	
	HIGH					175.8	

		HOURS	FREQUENCY	YEAR TOTAL HOURS
20. GILFILL OPERATOR T-1 INTR.	MEAN	3.9	11.	42.9
	LOW	3.5	9.	31.5
	HIGH	4.3	14.	60.2
	N	134	144	
21. T-1 INTR. VEHICLE	MEAN	3.1	8.	24.8
	LOW	2.4	7.	19.6
	HIGH	3.8	9.	29.7
	N	144	157	
22. MILITARY GENERATOR -T-1 ACFT VEHICLE	MEAN	2.8	7.	19.6
	LOW	2.6	6.	15.6
	HIGH	3.1	8.	24.8
	N	133	138	
23. T-1 INTR. BULBS	MEAN	7.5	18.	136.8
	LOW	6.5	15.	97.5
	HIGH	8.8	21.	184.8
	N	112	112	
24. FIRE SAFETY	MEAN	1.5	4.	6.0
	LOW	1.2	3.	4.2
	HIGH	1.7	4.	6.8
	N	116	103	
25. VEHICLE TONS-1/4TON	MEAN	3.5	3.	10.5
	LOW	3.2	3.	9.6
	HIGH	3.8	4.	15.2
	N	153	144	
26. VEHICLE LONG-MILLAR	MEAN	4.3	4.	17.2
	LOW	3.9	3.	11.7
	HIGH	4.7	4.	18.8
	N	99	99	
TOTAL SUM OF PRODUCTS	MEAN		257.8	
	LOW		149.7	
	HIGH		340.3	

EX. MEC

		HOURS	FREQUENCY	YEAR TOTAL HOURS
ON-ICE TRAINING (IND)	MEAN	4.9	6.	39.2
	LOW	4.4	7.	30.8
	HIGH	5.3	8.	42.4
	N	161	153	
ON-ICE TRAINING (TRACK)	MEAN	3.2	6.	19.2
	LOW	2.9	6.	17.4
	HIGH	3.5	7.	24.5
	N	150	156	
ON-ICE TRAINING (TANK)	MEAN	3.1	6.	18.6
	LOW	2.8	5.	14.0
	HIGH	3.3	7.	23.1
	N	114	117	
TOT. SUM OF PRODUCTS	MEAN		77.0	
	LOW		62.2	
	HIGH		90.0	

			HOURS	FREQUENCY	YEAR TOTAL HOURS
SHORT VISION SHORT	MEAN		3.2	7.	22.4
	LOW		2.9	6.	17.4
	HIGH		3.5	8.	24.8
	N		147	136	
SHORT VISION LONG COMBINATION	MEAN		9.9	9.	89.1
	LOW		8.4	8.	70.4
	HIGH		11.0	10.	110.0
	N		144	152	
SHORT VISION LONG COMBINATION	MEAN		3.5	5.	17.5
	LOW		3.1	5.	15.5
	HIGH		3.7	6.	21.4
	N		162	159	
SHORT VISION LONG COMBINATION	MEAN		3.5	6.	21.0
	LOW		3.1	6.	18.6
	HIGH		3.8	7.	26.6
	N		170	162	
SHORT VISION LONG COMBINATION	MEAN		4.0	6.	24.0
	LOW		3.6	5.	18.0
	HIGH		4.6	6.	27.6
	N		161	153	
SHORT VISION LONG COMBINATION	MEAN		7.9	7.	55.3
	LOW		7.4	6.	44.4
	HIGH		8.5	7.	59.5
	N		155	158	
SHORT VISION LONG COMBINATION	MEAN		2.6	3.	7.8
	LOW		2.4	3.	7.2
	HIGH		2.7	4.	11.6
	N		157	159	
SHORT VISION LONG COMBINATION	MEAN		6.1	6.	36.6
	LOW		5.7	6.	34.2
	HIGH		6.7	7.	46.9
	N		163	157	
TOTAL SUM OF PRODUCTS	MEAN			273.7	
	LOW			225.7	
	HIGH			334.4	

G. S. 001

			HOURS	FREQUENCY	YEAR TOTAL HOURS
002 41MM MOUNTAIN CARRIER MOUNTED OUTLET	MEAN		12.4	16.	198.4
	LOW		10.7	14.	149.8
	HIGH		14.0	19.	266.0
	N		104	118	
003 107MM MOUNTED (CAN- MOUNTED) OUTLET	MEAN		12.8	17.	217.6
	LOW		11.1	14.	155.4
	HIGH		14.5	19.	275.5
	N		121	133	
004 107MM MOUNTED	MEAN		3.1	7.	21.7
	LOW		2.4	6.	16.8
	HIGH		3.3	8.	26.4
	N		153	157	
005 107MM MOUNTED	MEAN		3.6	6.	21.6
	LOW		3.3	5.	16.5
	HIGH		3.9	7.	27.3
	N		86	88	
006 107MM MOUNTED	MEAN		3.4	9.	32.4
	LOW		3.2	8.	25.6
	HIGH		4.0	10.	40.0
	N		110	105	
007 107MM MOUNTED CHECKS	MEAN		3.8	9.	34.2
	LOW		3.2	8.	25.6
	HIGH		4.2	11.	44.2
	N		121	108	
008 107MM MOUNTED	MEAN		3.1	9.	27.9
	LOW		2.4	7.	19.6
	HIGH		3.3	10.	33.0
	N		141	142	
009 107MM MOUNTED	MEAN		3.9	9.	35.1
	LOW		3.4	8.	28.8
	HIGH		4.0	10.	40.0
	N		151	160	
010 107MM MOUNTED	MEAN		2.4	5.	12.0
	LOW		2.1	4.	8.4
	HIGH		2.5	6.	15.0
	N		164	154	

YEAR	TOTAL HOURS	FREQUENCY	HOURS			
				MEAN	LOW	HIGH
122 0101 SUBMACHINEGUN	12.5	5.	2.5	MEAN	LOW	HIGH
	9.6	4.	2.4	LOW	LOW	HIGH
	16.8	6.	2.8	HIGH	LOW	HIGH
		145	145	N		
124 110	60.0	12.	5.0	MEAN	LOW	HIGH
	46.0	10.	4.6	LOW	LOW	HIGH
	78.4	14.	5.6	HIGH	LOW	HIGH
		126	132	N		
126 110000	42.0	7.	6.0	MEAN	LOW	HIGH
	30.6	6.	5.1	LOW	LOW	HIGH
	54.4	8.	6.4	HIGH	LOW	HIGH
		70	72	N		
127 1105 PLOTTING BOARD	63.8	11.	5.8	MEAN	LOW	HIGH
	51.0	10.	5.3	LOW	LOW	HIGH
	76.8	12.	6.4	HIGH	LOW	HIGH
		122	134	N		
128 110000 DUTIES	54.0	9.	6.0	MEAN	LOW	HIGH
	43.2	8.	5.4	LOW	LOW	HIGH
	67.0	10.	6.7	HIGH	LOW	HIGH
		107	113	N		
130 110002 SPECIFIC	142.5	19.	7.5	MEAN	LOW	HIGH
	94.5	15.	6.3	LOW	LOW	HIGH
	202.4	23.	8.4	HIGH	LOW	HIGH
		65	61	N		
131 110001 SPECIFIC	93.6	12.	7.8	MEAN	LOW	HIGH
	65.0	10.	6.5	LOW	LOW	HIGH
	115.7	13.	8.9	HIGH	LOW	HIGH
		97	105	N		
132 110000 MACHINEGUN	26.4	8.	3.3	MEAN	LOW	HIGH
	21.7	7.	3.1	LOW	LOW	HIGH
	36.0	10.	3.6	HIGH	LOW	HIGH
		112	109	N		
133 110000	124.5	15.	8.3	MEAN	LOW	HIGH
	88.8	12.	7.4	LOW	LOW	HIGH
	161.5	17.	9.5	HIGH	LOW	HIGH
		120	117	N		

S. OUT	YEAR	TOTAL	HOURS	FREQUENCY	HOURS	MEAN	LOW	HIGH	N
	4.3 VISUAL COMMUNICATIONS		2.4	6.	16.8				
			2.5	5.	17.5				
			3.1	6.	18.6				
			167	162					
	4.9 T-1000 VULNERABILITIES		2.5	5.	12.5				
			2.4	5.	12.0				
			2.4	6.	16.8				
			157	158					
	4.7 RANGE FIRING-MORTAR -MOUNTED		7.5	6.	45.0				
			6.7	5.	33.5				
			8.5	7.	59.5				
			115	116					
	4.8 FIRING-CLAYMORE		2.6	3.	7.8				
			2.4	3.	7.2				
			152	148					
	4.9 NIGHT FIRING-M16A1		3.4	4.	15.6				
			3.6	3.	10.8				
			4.2	4.	16.8				
			147	144					
	4.9 DAY FIRING-M16A1		5.7	5.	28.5				
			5.1	4.	20.4				
			6.1	5.	30.5				
			159	164					
	4.1 FIRING-LAY		3.6	5.	18.0				
			3.3	4.	13.2				
			3.4	5.	19.5				
			147	160					
	4.2 HAND GRENADES		2.9	3.	8.7				
			2.6	3.	7.8				
			3.2	3.	9.6				
			157	155					
	4.3 FIRING-GRENADE LAUNCHER		3.5	4.	14.0				
			3.2	4.	12.8				
			3.4	5.	19.0				
			147	162					

YEAR	TOTAL HOURS	FREQUENCY	HOURS	MEAN	LOW	HIGH	N
064 NIGHT FIRING-M60	21.5	5.	4.3	MEAN	4.0	4.7	114
	16.0	4.		LOW			
	23.5	5.		HIGH			
		130		N			
066 FIRING-45 CALIBER PISTOL	9.6	3.	3.2	MEAN	2.9	3.5	159
	8.7	3.		LOW			
	10.5	3.		HIGH			
		161		N			
067 FIRING-CALIBER 50 MACHINEGUN	19.5	5.	1.9	MEAN	3.5	4.2	141
	14.0	4.		LOW			
	21.0	5.		HIGH			
		166		N			
068 NIGHT FIRING-CAL-50 MACHINEGUN	16.0	4.	4.0	MEAN	3.8	4.3	150
	11.4	3.		LOW			
	17.2	4.		HIGH			
		150		N			
069 FIRING-MORTAR-DISMOUNTED	25.2	4.	6.3	MEAN	5.7	6.7	125
	22.8	4.		LOW			
	26.8	4.		HIGH			
		114		N			
070 FIRING-TO4	45.5	7.	6.5	MEAN	6.0	7.1	130
	36.0	6.		LOW			
	56.8	8.		HIGH			
		134		N			
071 FIRING-10MM HCLR	37.8	6.	6.3	MEAN	5.4	7.1	65
	27.0	5.		LOW			
	49.7	7.		HIGH			
		65		N			
072 FIRING-DRAGON	48.0	8.	6.0	MEAN	5.4	6.5	112
	37.8	7.		LOW			
	58.5	9.		HIGH			
		113		N			
073 FIRING-M1A1 SUB-MACHINEGUN	9.6	3.	3.2	MEAN	2.9	3.5	148
	8.7	3.		LOW			
	10.5	3.		HIGH			
		146		N			
TOTAL SUM OF PRODUCTS	1619.8			MEAN			
	1211.5			LOW			
	2051.6			HIGH			

H. Support		HOURS			FREQUENCY	YEAR	
		MEAN	LOW	HIGH		TOTAL	HOURS
JKA FIRE SUPPORT		4.1			7.	30.1	
		4.0			7.	28.0	
		4.6			8.	36.8	
		N	147		159		
JKA FORWARD OBSERVER PROCEDURES		5.4			7.	37.8	
		4.9			6.	29.4	
		5.8			7.	40.6	
		N	156		153		
TOTAL SUM OF PRODUCTS		MEAN			67.0		
		LOW			57.4		
		HIGH			77.4		

		YEAR	
		TOTAL	HOURS
		FREQUENCY	
		HOURS	
001 DIVER MAINTENANCE	MEAN	5.0	125.0
	LOW	4.4	21.0
	HIGH	5.6	92.4
	N	162	162.4
02 CASUALTY REMOVAL	MEAN	1.4	7.2
	LOW	1.7	5.1
	HIGH	1.0	7.6
	N	105	
07 FIRST AID	MEAN	4.2	25.2
	LOW	3.8	19.0
	HIGH	4.4	26.4
	N	161	
TOTAL SUM OF PRODUCTS		157.4	
		116.5	
		196.4	
GRAND SUM OF PRODUCTS	MEAN	2738.5	
	LOW	2099.1	
	HIGH	3435.5	

TABLE IIIIG. SGT VIT SOLDIER'S MANUAL TASKS--TIME AND FREQUENCIES

FACTORS APPLIED-		95 PER CENT PROFICIENCY 25 PER CENT NOT PRESENT FOR TRAINING 40 PER CENT TRAINER GRADE SUBSTITUTION 35 PER CENT CHANGE IN DUTY POSITION		
A. H TLE POSITION		HOURS	FREQUENCY	YFAM TOTAL HOURS
012 CLAYMORE	MEAN	4.4	5.	22.0
	LOW	3.9	5.	19.5
	HIGH	4.4	6.	27.6
	N	163	164	
013 AL/AT MINES	MEAN	6.0	4.	24.0
	LOW	5.8	4.	23.2
	HIGH	6.5	4.	26.0
	N	150	142	
048 HOSTILE AIRCRAFT	MEAN	3.9	5.	19.5
	LOW	3.7	5.	18.5
	HIGH	4.4	6.	26.4
	N	156	163	
050 AIRCRAFT IDENTIFICATION	MEAN	4.6	6.	27.6
	LOW	4.2	5.	21.0
	HIGH	5.1	7.	35.7
	N	156	153	
045 DEMOLITION TRAINING	MEAN	5.8	3.	17.4
	LOW	5.3	3.	15.9
	HIGH	6.2	3.	18.6
	N	147	153	
TOTAL SUM OF PRODUCTS				
	MEAN		110.5	
	LOW		98.1	
	HIGH		134.3	

B. COMMENTS			HOURS		FREQUENCY		YEAR
							TOTAL
							HOURS
FOR RADIO PROCEDURES	MEAN		4.6		8.		36.8
	LOW		4.2		7.		29.4
	HIGH		4.9		9.		44.1
	N		154		162		
FOR COMMO EQUIPMENT	MEAN		6.0		8.		48.0
	LOW		5.5		7.		38.5
	HIGH		6.7		9.		60.3
	N		166		149		
FOR TOTAL	MEAN		5.1		7.		35.7
	LOW		4.6		7.		32.2
	HIGH		5.5		8.		44.0
	N		149		162		
TOTAL SUM OF PRODUCTS			MEAN		120.5		
			LOW		100.1		
			HIGH		148.4		

C. FIVE - ANNUAL		HOURS		FREQUENCY		YEAR TOTAL HOURS	
007 FID MOVEMENT SKILLS		MEAN	9.0	8.		72.0	
	LOW		8.1	7.		56.7	
	HIGH		9.9	9.		89.1	
	N		116	117			
009 FID MOVEMENT SKILLS (MORTAR)		MEAN	6.2	7.		43.4	
	LOW		5.5	6.		33.0	
	HIGH		6.9	7.		48.3	
	N		99	112			
009 VEHICLE POSITIONING		MEAN	5.1	7.		35.7	
	LOW		4.6	6.		27.6	
	HIGH		5.5	7.		38.5	
	N		152	157			
010 VEHICLE MOVEMENT		MEAN	7.6	7.		53.2	
	LOW		6.9	6.		41.4	
	HIGH		8.5	8.		69.0	
	N		160	153			
033 TANK EXTERNAL PHONE		MEAN	2.3	4.		9.2	
	LOW		2.1	4.		8.8	
	HIGH		2.5	5.		12.5	
	N		114	115			
045 ENEMY WINS		MEAN	5.3	5.		26.5	
	LOW		5.1	5.		25.5	
	HIGH		5.8	6.		34.8	
	N		153	160			
TOTAL SUM OF PRODUCTS		MEAN		240.0			
	LOW			192.4			
	HIGH			291.2			

D. MIVE

		HOURS	FREQUENCY	YEAR TOTAL HOURS
020 MILITARY OPERATOR TRAINING	MEAN	6.5	11.	71.5
	LOW	5.4	9.	52.2
	HIGH	7.2	14.	100.8
	N	134	144	
021 1/4 TON VEHICLE TRAINING	MEAN	5.1	8.	40.8
	LOW	4.6	7.	32.2
	HIGH	5.5	9.	49.5
	N	148	157	
023 AUXILIARY GENERATOR -TRACKED VEHICLE	MEAN	4.6	7.	32.2
	LOW	4.4	6.	26.4
	HIGH	5.1	8.	40.8
	N	133	138	
029 DRIVER DUTIES	MEAN	12.7	18.	228.6
	LOW	10.9	15.	163.5
	HIGH	14.6	21.	306.6
	N	112	112	
044 FIRE SAFETY	MEAN	2.5	4.	10.0
	LOW	2.3	3.	6.9
	HIGH	2.4	4.	11.2
	N	116	103	
053 VEHICLE TRNG-1/4TON	MEAN	5.8	3.	17.4
	LOW	5.3	3.	15.9
	HIGH	6.2	4.	24.8
	N	153	144	
054 VEHICLE TRNG-MILITARY	MEAN	7.2	4.	28.8
	LOW	6.5	3.	19.5
	HIGH	7.9	4.	31.6
	N	99	99	
TOT I SUM OF PRODUCTS	MEAN		429.3	
	LOW		316.6	
	HIGH		565.3	

E. NRC		HOURS		FREQUENCY	YEAR	
		MEAN	LOW		TOTAL	HOURS
104 NRC TRAINING (IND)	MEAN	8.1		8.	64.8	
	LOW	7.4		7.	51.8	
	HIGH	8.8		8.	70.4	
	N	161		153		
105 NRC TRAINING (TRACK ON WHEELED VEHICLE	MEAN	5.3		6.	31.8	
	LOW	4.9		6.	29.4	
	HIGH	5.8		7.	40.6	
	N	150		156		
106 NRC TRAINING (TANK)	MEAN	5.1		6.	30.6	
	LOW	4.6		5.	23.0	
	HIGH	5.5		7.	38.5	
	N	114		117		
TOTAL SUM OF PRODUCTS		MEAN		127.2		
		LOW		104.2		
		HIGH		149.5		

1. RECORDS - SECURITY

ABILITY	MEAN	LOW	HIGH	N	HOURS	FREQUENCY	YEAR TOTAL HOURS
005 NIGHT VISION SIGHT	5.3	4.9	6.0	147	7.	37.1	
					6.	29.4	
					8.	48.0	
					136		
014 CAMOUFLAGE - CONCEALMENT	16.4	14.6	18.2	144	9.	147.6	
					8.	116.8	
					10.	182.0	
					152		
016 DP OPERATION	5.4	5.1	6.5	162	5.	29.0	
					5.	25.5	
					6.	39.0	
					159		
017 INTELLIGENCE/ SECURITY	5.4	5.1	6.2	170	6.	34.8	
					6.	30.6	
					7.	43.4	
					162		
020 SURVEILLANCE	6.7	6.0	7.6	161	6.	40.2	
					5.	30.0	
					6.	45.6	
					153		
041 GROUND NAVIGATION	13.2	12.2	14.1	155	7.	92.4	
					6.	73.2	
					7.	98.7	
					158		
051 SECURITY	4.4	3.9	4.9	157	3.	13.2	
					3.	11.7	
					4.	19.6	
					150		
055 G-P READING	10.2	9.5	11.1	163	6.	61.2	
					6.	57.0	
					7.	77.7	
					157		
TOTAL SUM OF PRODUCTS	455.5	374.2	554.0				

G. 5. 001

		HOURS	FREQUENCY	YEAR TOTAL HOURS
02 41MM MORTAR(CARRIER MOUNTED) DUTIES	MEAN	20.4	16.	329.6
	LOW	17.8	14.	249.2
	HIGH	23.3	19.	442.7
	N	104	118	
03 107MM MORTAR (CAR- RIER MOUNTED) DUTY	MEAN	21.3	17.	362.1
	LOW	18.5	14.	259.0
	HIGH	24.0	19.	456.0
	N	121	133	
11 M16 RIFLE	MEAN	5.1	7.	35.7
	LOW	4.6	6.	27.6
	HIGH	5.5	8.	44.0
	N	153	157	
14 40MM MCLR	MEAN	6.0	6.	36.0
	LOW	5.5	5.	27.5
	HIGH	6.5	7.	45.5
	N	66	68	
15 M40A3	MEAN	6.0	9.	54.0
	LOW	5.3	8.	42.4
	HIGH	6.7	10.	67.0
	N	110	105	
16 MEDEVAC MAINTENANCE CHECKS	MEAN	6.2	9.	55.8
	LOW	5.3	8.	42.4
	HIGH	6.9	11.	75.9
	N	121	108	
17 M40 MACHINEGUN	MEAN	5.1	9.	45.9
	LOW	4.6	7.	32.2
	HIGH	5.5	10.	55.0
	N	141	142	
18 CAL.50 MACHINEGUN	MEAN	6.5	9.	58.5
	LOW	6.0	8.	48.0
	HIGH	6.7	10.	67.0
	N	151	160	
19 .45 CAL.19 R PISTOL	MEAN	3.9	5.	19.5
	LOW	3.5	4.	14.0
	HIGH	4.2	6.	25.2
	N	144	158	

			HOURS	FREQUENCY	YEAR TOTAL HOURS
022 0A1 SUMMACHING	MEAN		4.2	5.	21.0
	LOW		3.9	4.	15.6
	HIGH		4.6	6.	27.6
	N		145		
023 0A1	MEAN		8.3	12.	99.6
	LOW		7.6	10.	76.0
	HIGH		9.2	14.	128.8
	N		132		
024 0A1	MEAN		9.9	7.	69.3
	LOW		8.5	6.	51.0
	HIGH		11.1	8.	90.4
	N		72		
027 0A1 PLATTING BOARD	MEAN		9.7	11.	106.7
	LOW		8.4	10.	88.0
	HIGH		10.5	12.	127.2
	N		134		
028 0A1	MEAN		9.9	9.	89.1
	LOW		9.0	8.	72.0
	HIGH		11.1	10.	111.0
	N		113		
029 0A2 SPECIFIC	MEAN		12.5	19.	237.5
	LOW		10.4	15.	156.0
	HIGH		14.6	23.	335.8
	N		61		
031 0A1 SPECIFIC	MEAN		12.9	12.	154.8
	LOW		10.9	10.	109.0
	HIGH		14.4	13.	192.4
	N		105		
032 0A1	MEAN		5.5	8.	44.0
	LOW		5.1	7.	35.7
	HIGH		6.0	10.	60.0
	N		109		
033 0A1	MEAN		13.9	15.	208.5
	LOW		12.2	12.	146.4
	HIGH		15.7	17.	266.9
	N		117		

			HOURS	FREQUENCY	YEAR TOTAL HOURS
A1 FLYING- LOW-MOUNTAIN	MEAN	4.5	162	6.	27.6
	LOW	4.2		5.	21.0
	HIGH	5.1		6.	30.6
	N	162			
A2 FLYING- V. MOUNTAIN	MEAN	4.2	158	5.	21.0
	LOW	3.9		5.	19.5
	HIGH	4.6		6.	27.6
	N	158			
A3 FLYING- MOUNTAIN	MEAN	12.5	116	6.	75.0
	LOW	11.1		5.	55.5
	HIGH	14.1		7.	99.7
	N	116			
A4 FLYING- CLEARWATER	MEAN	9.4	148	3.	13.2
	LOW	3.9		3.	11.7
	HIGH	4.5		3.	13.8
	N	148			
A5 FLYING- MOUNTAIN	MEAN	6.5	144	4.	26.0
	LOW	6.0		3.	14.0
	HIGH	6.9		4.	27.6
	N	144			
A6 FLYING- MOUNTAIN	MEAN	9.5	164	5.	47.5
	LOW	8.5		4.	34.0
	HIGH	10.2		5.	51.0
	N	164			
A7 FLYING- MOUNTAIN	MEAN	6.0	160	5.	30.0
	LOW	5.5		4.	22.0
	HIGH	6.5		5.	32.5
	N	160			
A8 FLYING- MOUNTAIN	MEAN	4.9	155	3.	14.7
	LOW	4.4		3.	13.2
	HIGH	5.3		3.	15.9
	N	155			
A9 FLYING- MOUNTAIN	MEAN	5.4	162	4.	21.2
	LOW	5.3		4.	21.2
	HIGH	6.2		5.	31.0
	N	162			

NO-A184 397

ARMY TRAINING STUDY BATTALION TRAINING SURVEY VOLUMES

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1 AND 2(U) ACTUARIAL RESEARCH CORP FALLS CHURCH VA*

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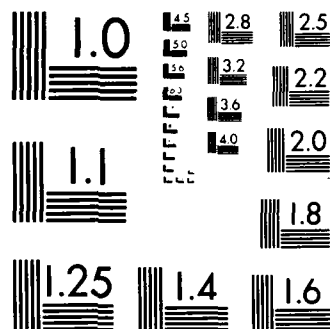
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

5.001

				HOURS	FREQUENCY	YEAR TOTAL HOURS
'64 NIGHT FIRING-M40	MEAN	7.2			5.	36.0
	LOW	6.7				26.8
	HIGH	7.9			5.	39.5
	N	114			130	
'66 FIRING-.45 CALIBER PISTOL	MEAN	5.3			3.	15.9
	LOW	4.9			3.	14.7
	HIGH	5.8			3.	17.4
	N	159			161	
'67 FIRING-CALIBER.50 MACHINEGUN	MEAN	6.5			5.	32.5
	LOW	5.8			4.	23.2
	HIGH	6.9			5.	34.5
	N	141			166	
'68 NIGHT FIRING-CAL.50 MACHINEGUN	MEAN	6.7			4.	26.8
	LOW	6.2			3.	18.6
	HIGH	7.2			4.	28.8
	N	150			150	
'69 FIRING-MORTAR- DISMOUNTED	MEAN	10.4			4.	41.6
	LOW	9.5			4.	38.0
	HIGH	11.1			4.	44.4
	N	125			114	
'70 FIRING-TOW	MEAN	10.9			7.	76.3
	LOW	9.9			6.	59.4
	HIGH	11.8			8.	94.4
	N	130			134	
'71 FIRING-106MM RCLR	MEAN	10.4			6.	62.4
	LOW	9.0			5.	45.0
	HIGH	11.8			7.	82.6
	N	65			65	
'72 FIRING-DRAGON	MEAN	9.9			8.	79.2
	LOW	9.0			7.	63.0
	HIGH	10.9			9.	98.1
	N	112			113	
'73 FIRING-43A1 50 MACHINEGUN	MEAN	5.3			3.	15.9
	LOW	4.9			3.	14.7
	HIGH	5.8			3.	17.4
	N	144			146	
TOTAL SUM OF PRODUCTS						2692.4
						2011.5
						3404.2

H. SUPPORT		HOURS		FREQUENCY	TOTAL YEAR HOURS
OAK FIRE SUPPORT	MEAN	7.2		7.	50.4
	LOW	6.7		7.	46.9
	HIGH	7.6		8.	60.8
	N	147		159	
OAK FORWARD OBSERVER PROCEDURES	MEAN	9.0		7.	63.0
	LOW	8.1		6.	48.6
	HIGH	9.7		7.	67.9
	N	156		153	
TOTAL SUM OF PRODUCTS		MEAN	113.4		
		LOW	95.5		
		HIGH	128.7		

L. SUSTAJ

			HOURS	FREQUENCY	YEAR TOTAL HOURS
101 DRIVER MAINTENANCE	MEAN		8.3	25.	207.5
	LOW		7.4	21.	155.4
	HIGH		9.2	29.	266.8
	N		165	152	
132 CASUALTY REMOVAL	MEAN		3.0	4.	12.0
	LOW		2.8	3.	8.4
	HIGH		3.2	4.	12.8
	N		104	105	
147 FIRST AID	MEAN		6.9	6.	41.4
	LOW		6.2	5.	31.0
	HIGH		7.4	6.	44.4
	N		146	161	
TOTAL SUM OF PRODUCTS	MEAN			260.9	
	LOW			194.8	
	HIGH			324.0	
GRAND SUM OF PRODUCTS	MEAN			4549.7	
	LOW			3487.6	
	HIGH			5699.6	

SURVEY SET VII DESCRIPTIONS

of

SOLDIER MANUAL TASKS

The Soldier Manual Tasks were assembled under the 73 item headings used in Survey Set VII. The 73 items were subsumed under the nine Battle Drills listed in this document.

Cross reference keys are provided on the last two pages, showing:

1. Battle Drill X Soldier Manual Tasks (Set VII Item Numbers), and
2. Soldier Manual Tasks (Set VII Item Numbers) X Battle Drill.

A. Battle Position

Q 12 CLAYMORE

- Install/recover an electrically armed Claymore.

Q 13 PA/AT MINES

- a. Emplace and recover antipersonnel and antitank mines.
- b. Identify Minefield Markers.
- c. Assemble a non-electric detonation system.

Q 48 HOSTILE AIRCRAFT

- Engage hostile aircraft with individual weapon.

Q 50 AIRCRAFT IDENTIFICATION

- Identify combat aircraft.

Q 65 DEMOLITION TRAINING

- Emplace a demolition charge.

B. Communications

Q 35 RADIO PROCEDURES

- a. Establish and enter or leave a radio net.
- b. Apply anti-jamming procedures.

Q 38 COMMUNICATIONS EQUIPMENT

- a. Perform operator maintenance on tactical FM radio sets and accessories.
- b. Install radio remote control equipment.
- c. Perform operator maintenance on field telephone TA-1/PT.

Q 52 CEOI

- a. Use a communications-electronics operating instructions (CEOI) extract, determine call signs, frequencies, and item number identifiers.
- b. Authenticate transmissions and encrypt/decrypt numbers and grid zone letters using the Kal 61 with KTC 1400 numerical code.
- c. Encode and decode messages using a tactical operations code, KTC-600.

C. Fire and Maneuver

Q 7 INDIVIDUAL MOVEMENT SKILLS

- a. Move as a member of a fire team.
- b. Move under direct fire.
- c. React to indirect fire.
- d. React to flares.
- e. Move over, through, or around obstacles.

Q 8 INDIVIDUAL MOVEMENT SKILLS (MORTAR)

- Move as a member of a dismounted mortar squad (81-mm mortar).

Q 9 VEHICLE POSITIONING

- Select temporary vehicular battlefield position.

Q 10 VEHICLE MOVEMENT

- Conceal movement by route selection.

Q 33 TANK EXTERNAL PHONE

- a. Place an external phone into operation.
- b. Perform crew maintenance on a tank external phone.

Q 45 ENEMY MINES

- a. Locate mines with a mine detector.
- b. Remove mines with a grapnel or rope.

D. Move

Q 20 M113A1 OPERATOR TRAINING

- a. Start and stop an M113A1 vehicle engine.
- b. Operate an M113A1 vehicle.
- c. Prepare an M113A1 vehicle for towing.

Q 21 ½ TON VEHICLE TRAINING

- Operate a ½ series vehicle.

Q 23 AUXILIARY GENERATOR, TRACKED VEHICLE

- a. Maintain auxiliary generator on M577 tracked vehicle.
- b. Install/operate auxiliary generator on M577 tracked vehicle.

Q 29 DRIVER DUTIES

- a. Perform before, during, and after operation maintenance checks and services on an M60-Series tank.
- b. Maintain operator's items in equipment logbook.
- c. Perform driver prepare-to-fire checks.
- d. Start and stop a tank engine.
- e. Operate a tank.
- f. Recover a tank by self-recovery means.
- g. Prepare a tank for towing.
- h. Participate in mounted and dismounted tactical movement.
- i. Maintain basic issue items (Bll).

Q 44 FIRE SAFETY

- o Extinguish a fire in a tank.

Q 53 VEHICLE TRAINING - 1/4 TON

- a. Self-recover a 1/4 ton series vehicle.
- b. Ford a water obstacle with a 1/4 ton series vehicle.

Q 54 VEHICLE TRAINING - M113A1

- a. Self-recover a high-centered M113A1 vehicle.
- b. Operate an M113A1 vehicle in water.
- c. Extinguish a fire in a track vehicle.

E. NBC

Q 4 NBC TRAINING (INDIVIDUAL)

- a. Maintain protective mask and accessories.
- b. Put on a protective mask.
- c. Take cover as protection against NBC hazards.
- d. Decontaminate self and individual equipment.
- e. Administer antidote to a nerve agent casualty.
- f. Measure radiation using radiac instruments.

Q 5 NBC TRAINING (TRACK OR WHEEL VEHICLE)

- a. Prepare a track or wheel vehicle for nuclear attack.
- b. Maintain gas particulate unit of a track vehicle.

Q 6 NBC TRAINING (TANK)

- a. Prepare a tank for nuclear attack.
- b. Maintain gas particulate unit of a tank.

F. Reconnaissance & Security

Q 25 NIGHT VISION

- a. Maintain AN/PVS-2 (night vision sight).
- b. Conduct surveillance using an AN/PVS-2.

Q 34 CAMOUFLAGE/CONCEALMENT, PREPARATION OF POSITION

- a. Camouflage/conceal self and individual equipment.
- b. Camouflage/conceal equipment.
- c. Camouflage/conceal defensive positions.
- d. Select temporary battlefield positions.
- e. Construct individual defensive positions.
(done under A. Battle position)
- f. Clear fields of fire.
- g. Construct a crew-served weapons positions.
- h. Prepare and use aiming and firing stakes for the M16A1 rifle.
- i. Prepare and use aiming and firing stakes for the M16A1 rifle.
- j. Prepare and use aiming and firing stakes for the M203 grenade launcher.
- k. Prepare a range card for a TOW.
- l. Construct TOW position.
- m. Prepare a range card for a 106mm RCLR.
- n. Construct 106mm RCLR position (mounted).
- o. Construct 106mm RCLR position (dismounted).
- p. Prepare range card for 90mm RCLR.
- q. Engage targets with 90mm RCLR.
- r. Prepare range card for Dragon.
- s. Prepare MAW position.
- t. Occupy Redeye position.
- u. Use aiming and firing stakes for the M60 machinegun.
- v. Construct M60 machinegun position.
- w. Prepare a range card for an M60 machinegun.

Q 36 OP OPERATION

- Operate an Observation Post.

Q 37 INTELLIGENCE/SECURITY

- a. Use challenge and password.
- b. Process known or suspected enemy personnel.
- c. Collect/report information - SALUTE.
- d. Prepare a Spot Report.
- e. Process captured documents and material.

Q 40 SURVEILLANCE

- Conduct a day and night surveillance without the aid of electronic devices.

Q 41 GROUND NAVIGATION

- a. Orient a map using a compass.
- b. Orient a map to the ground by map-terrain association.
- c. Determine a location on the ground.
- d. Navigate from one position on the ground to another.
- e. Determine distance while moving between 2 points on the ground.
- f. Determine a magnetic azimuth between two known points on the ground.

Q 51 SECURITY

- a. Resist enemy interrogation, indoctrination, and exploitation if you are captured.
- b. Safeguard classified information.

Q 55 MAP READING

- a. Identify terrain features (natural and manmade) on the map.
- b. Determine the grid coordinates of a point on a military map using the military grid reference system.
- c. Determine the elevation of a point on the ground using a map.
- d. Measure a ground distance on a map.
- e. Convert a magnetic azimuth to a grid azimuth (or a grid azimuth to a magnetic azimuth).
- f. Determine a grid azimuth between two given points on a map.
- g. Estimate range.

G. Shoot

Q 2 81mm MORTAR GUNNER, ASSISTANT GUNNER, AMMUNITION BEARER
(CARRIER MOUNTED) DUTIES

- a. Place carrier mounted 81mm mortar into action.
- b. Boresight 81mm mortar.
- c. Perform safety checks on 81mm mortar.
- d. Lay mortar for deflection and elevation.
- e. Prepare 81mm mortar ammunition for firing.
- f. Maintain 81mm mortar and associated fire control equipment.
- g. Remove a misfire from the 81mm mortar.
- h. Refer sight and realign aiming posts.
- i. Reciprocally lay mortar using M2 aiming circle and place out aiming posts.
- j. Manipulate mortar for traversing and searching fires.
- k. Dismount mortar and place in action ground mounted.

Q 3 107mm (4.2-in) MORTAR GUNNER, ASSISTANT GUNNER,
AMMUNITION BEARER (CARRIER MOUNTED) DUTIES

- a. Place carrier mounted 107mm (4.2-in) mortar in action.
- b. Boresight 107mm (4.2-in) mortar.
- c. Perform safety checks on 107mm (4.2-in) mortar.
- d. Lay mortar for deflection and elevation.
- e. Prepare 107mm (4.2-in) mortar ammunition for firing.
- f. Maintain 107mm (4.2-in) mortar and equipment.
- g. Remove a misfire from the 107mm (4.2-in) mortar.
- h. Refer sight and realign aiming posts.
- i. Reciprocally lay mortar using M2 aiming circle and place out aiming posts.
- j. Manipulate mortar for traversing fires.
- k. Dismount mortar and place in action ground mounted.

Q 11 M16 RIFLE

- a. Maintain an M16A1 rifle, magazines, and ammunition.
- b. Load and unload an M16A1 rifle magazine.
- c. Load, reduce a stoppage, unload, and clear an M16A1 rifle.

Q 14 90mm RCLR

- a. Maintain 90mm RCLR.
- b. Boresight the 90mm RCLR.
- c. Load, reduce a stoppage, unload, and clear 90mm RCLR.

Q 15 DRAGON

- a. Maintain Dragon system.
- b. Perform preoperational checks on Dragon tactical system.

Q 16 REDEYE MAINTENANCE CHECKS

- Perform preventive maintenance checks and services on (preoperation inspection of) Redeye.

Q 17 M60 MACHINEGUN

- a. Maintain an M60 machinegun and ammunition.
- b. Mount and dismount an M60 machinegun on a pedestal mount.

Q 18 CALIBER .50 MACHINEGUN

- a. Maintain a caliber .50 machinegun and ammunition.
- b. Load, reduce a stoppage, unload, and clear a caliber .50 machinegun.
- c. Set headspace and timing on a caliber .50 machinegun.
- d. Mount and dismount a caliber .50 HBM2 Flex Machinegun on a tracked vehicle.

Q 19 .45 CALIBER PISTOL

- a. Maintain a caliber .45 pistol and ammunition.
- b. Load, reduce a stoppage, unload, and clear a caliber .45 pistol.

Q 22 M3A1 SUBMACHINEGUN

- a. Load and clear the M3A1 submachinegun.
- b. Maintain an M3A1 submachinegun.

Q 24 TOW

- a. Maintain TOW weapons system.
- b. Load, correct malfunctions, unload, clear TOW.
- c. Make a TOW launcher self-test and preoperational inspection.

Q 26 106mm RCLR

- a. Maintain caliber .50 spotting rifle, M8C.
- b. Load, reduce a stoppage, unload, and clear the caliber .50 spotting rifle, M8C.
- c. Maintain the 106mm RCLR.
- d. Load, reduce a stoppage, unload, clear 106mm RCLR.
- e. Conduct 106mm RCLR weapon system alignment.

Q 27 M16 PLOTTING BOARD

- a. Prepare M16 plotting board for operation and determine initial firing data for mortars (pivot point).
- b. Process subsequent FO corrections using M16 plotting board (pivot point).

Q28 LOADER DUTIES

- a. Boresight a tank-mounted searchlight.
- b. Perform loader prepare-to-fire checks.
- c. Load a 105mm main gun.
- d. Perform loader's misfire procedures for 105mm main gun.
- e. Perform after-firing checks and services on a 105mm main gun.
- f. Unpack ammunition.
- g. Maintain ammunition.
- h. Stow ammunition.

Q 30 M60A2 SPECIFIC

- a. Load the main gun round/missile on M60A2 tank.
- b. Apply misfire procedures for an M60A2 main gun failure to fire.
- c. Perform after-firing checks and services on M60A2 tank.
- d. Perform before, during, and after operation checks and services on M60A2 tank.
- e. Perform driver prepare-to-fire checks, conventional/missile, on M60A2 tank.
- f. Perform loader's prepare-to-fire checks on M60A2 tank.

Q 31 M60A1 SPECIFIC

- a. Use misfire procedures for a 105mm main gun.
- b. Perform prepare-to-fire checks.
- c. Use battlesight.
- d. Adjust fire using burst on target.
- e. Use precision fire.
- f. Adjust fire from a subsequent fire command.

Q 39 COAX MACHINEGUN

- a. Load and clear a coaxial machinegun.
- b. Apply immediate action to a coaxial machinegun.
- c. Boresight a coaxial machinegun.

Q 42 REDEYE

- a. Determine aircraft category for Redeye ranging.
- b. Engage hostile aircraft with Redeye (MTS).
- c. Destroy Redeye.
- d. Perform immediate actions on Redeye.

Q43 VISUAL COMMUNICATIONS

- Communicate using visual signal techniques.

Q 49 ENEMY VULNERABILITIES

- Recognize vulnerabilities of enemy armor to individual (M16A1 and M203) and crew-served (M60) weapons.

Q 57 RANGE FIRING - MORTAR - MOUNTED

- Engage target using fire without FDC. (81mm mortar-mounted and 4.2 mortar-mounted).

Q 58 FIRING - CLAYMORE

- Fire a Claymore mine.

- Q 59 NIGHT FIRING - M16A1
- Mount/dismount AN/PVS-2 on an M16A1 rifle.
 - Zero AN/PVS-2 when mounted on an M16A1 rifle.
 - Engage a target with a rifle using AN/PVS-2.
- Q 60 DAY FIRING - M16A1
- Zero an M16A1 rifle.
 - Engage targets with an M16A1 rifle.
- Q 61 FIRING - LAW
- Prepare an M72A2 LAW for firing; restore M72A2 LAW to carrying configuration.
 - Engage targets with an M72A2 LAW - apply immediate action to correct a malfunction on an M72A2 LAW.
- Q 62 HAND GRENADES
- Maintain hand grenades.
 - Engage enemy targets with hand grenades.
- Q 63 FIRING - GRENADE LAUNCHER
- Maintain an M203 grenade launcher and ammunition.
 - Load, unload, and clear an M203 grenade launcher.
 - Zero an M203 grenade launcher.
 - Engage targets with an M203 grenade launcher and apply immediate action to reduce stoppage.
- Q 64 NIGHT FIRING - M60
- Mount/dismount an AN/PVS-2 (starlight scope) on an M60 machinegun.
 - Zero an AN/PVS-2 (starlight scope) to an M60 machinegun.
 - Zero an M60 machinegun.
- Q 66 FIRING - .45 CALIBER PISTOL
- Engage targets with a caliber .45 pistol.
- Q 67 FIRING - CALIBER .50 MACHINEGUN
- Engage targets with a caliber .50 machinegun.
 - Target/confirm targeting on a caliber .50 machinegun.
- Q 68 NIGHT FIRING - CALIBER .50 MACHINEGUN
- Mount/dismount AN/TVS-2 sight on caliber .50 machinegun.
 - Boresight AN/TVS-2 to caliber .50 machinegun. Engage a target with a caliber .50 machinegun using AN/TVS-2 night observation device (NOD).

Q 69 FIRING - MORTAR - DISMOUNTED

- Engage target using fire without FDC (81mm mortar and 4.2 mortar dismounted).

Q 70 FIRING - TOW

- Engage targets with TOW.

Q 71 FIRING - 106mm RCLR

- Engage targets with the 106mm RCLR.

Q 72 FIRING - DRAGON

- Engage targets and perform misfire procedures with the Dragon.

Q 73 FIRING - M3A1 SUBMACHINEGUN

- Engage targets and apply immediate action to an M3A1 submachinegun.

H. Support

Q 46 FIRE SUPPORT

- a. Call for supporting fires.
- b. Adjust supporting fire.

Q 56 FORWARD OBSERVER PROCEDURES

- a. Call for/adjust indirect fire (using grid coordinate method of target location and bracketing method adjustment).
- b. Call for/adjust indirect fire using the creeping method of adjustment.

I. Sustain

Q 1 DRIVER MAINTENANCE

- a. Perform before, during, and after operation checks and services on a vehicle.
- b. Maintain basic issue items (B11).
- c. Maintain operator's items in equipment logbook.

Q 32 CASUALTY REMOVAL

- Evacuate a wounded man from a tank.

Q 47 FIRST AID

- a. Apply the four life-saving measures (clear the air-passages, stop the bleeding, treat for shock, protect the wound).
- b. Apply first aid measures for burns.
- c. Remove a victim from an electrical source and apply first aid for electrical shock.
- d. Apply artificial resuscitation to a chemical-agent casualty.
- e. Apply preventive and first aid measures for carbon monoxide poisoning.
- f. Practice proper personal hygiene procedures.
- g. Apply preventive measures to reduce climatic injuries.
- h. Administer artificial respiration (mouth-to-mouth).

CROSS REFERENCE KEY

Battle Drill X Soldier Manual Tasks (Set VII Item Numbers)

<u>Battle Drills</u>		<u>Soldier Manual Tasks</u> <u>(Item Numbers in Set VII)</u>
A	Battle Position	12, 13, 48, 50, 65
B	Communications	35, 38, 52
C	Fire & Maneuver	7, 8, 9, 10, 33, 45
D	Move	20, 21, 23, 29, 44, 53, 54
E	NBC	4, 5, 6
F	Recon & Security	25, 34, 36, 37, 40, 41, 51, 55
G	Shoot	2, 3, 11, 14, 15, 16, 17, 18, 19, 22, 24, 26, 27, 28, 30, 31, 39, 42, 43, 49, 57, 58, 59, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 73
H	Support	46, 56
I	Sustain	1, 32, 47

CROSS REFERENCE KEY

Soldier Manual Tasks (Set VII Item Numbers) X Battle Drill

Set VII Item Number	Battle Drills								
	Battle Position	Commo	Fire & Man	Move	NBC	Recon & Sec	Shoot	Support	Sustain
	A	B	C	D	E	F	G	H	I
1									x
2							x		
3							x		
4					x				
5					x				
6					x				
7			x						
8			x						
9			x						
10			x						
11							x		
12	x								
13	x								
14							x		
15							x		
16							x		
17							x		
18							x		
19							x		
20				x					
21				x					
22							x		
23				x					
24							x		
25						x			
26							x		
27							x		
28							x		
29				x					
30							x		
31							x		
32									x
33			x						
34						x			
35		x							
36						x			
37						x			

	Battle Drills								
	Battle Position	Commo	Fire & Man	Move	NBC	Recon & Sec	Shoot	Support	Sustain
	A	B	C	D	E	F	G	H	I
38		x							
39								x	
40						x			
41						x			
42							x		
43							x		
44				x					
45			x						
46								x	
47									x
48	x								
49							x		
50	x								
51						x			
52		x							
53				x					
54				x					
55						x			
56								x	
57							x		
58							x		
59							x		
60							x		
61							x		
62							x		
63							x		
64							x		
65	x								
66							x		
67							x		
68							x		
69							x		
70							x		
71							x		
72							x		
73							x		

END

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DTIC